

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.94
Test oil : ISO 4113
Combination No. : 0402646881
Injection pump
Pump designation : PE6P120A720RS7176
: -10
EP type number : 0412626929
Governor
Governor design. : RGV300...900PA795-4
Governor no. : 0421813888

Cust. part No. :

Customer-spec. information
Customer : SCANIA
Motor : DS11

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1688901019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750015
Outside diameter : 6.0
x inside diameter : 3.0

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x length mm : 600

REMARKS

Check and set without ROBO diaphragam

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 5.05
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 14.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : +- 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 9.0

Del. quantity
 cm³/1000 strokes : 17.0
 Tolerance
 cm³/1000 strokes : +- 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.50
 Tolerance mm : +- 0.20

Rated speed rpm : 945
 guide sleeve
 travel mm : 8.00
 Tolerance mm : +- 0.10

Rated speed rpm : 350
 guide sleeve
 travel mm : 2.20
 Tolerance mm : +- 0.30

Rated speed rpm : 650
 guide sleeve
 travel mm : 5.00
 Tolerance mm : +- 0.30

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 970

Rack travel in mm : 12.80
 Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

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Rated speed rpm : 700
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 235.0
 Tolerance
 cm³/1000 strokes : +- 1.0
 Check tolerance
 cm³/1000S. : +- 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

control lever
 position degree : 50.0
 tolerance degree : +- 4.0

control lever
 position degree : 97.0
 tolerance degree : +- 4.0

rack travel mm : 13.10
 Rated speed rpm : 945
 Tolerance 1/min : +- 5

rack travel mm : 4.00
 Rated speed rpm : 1045
 Tolerance 1/min : +- 15

rack travel mm : 0.50
 Tolerance mm : +- 0.50
 Rated speed rpm : 1150

LOW IDLE

control lever
 position degree : 65.0
 tolerance degree : +- 4.0

control lever
 position degree : 17.0
 tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 4.50
 Tolerance mm : +- 0.10

rack travel mm : 2.00
 Rated speed rpm : 360

Tolerance 1/min : + 30
Rated speed rpm : 100
CRT mm min. : > 10.00

Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : + 0.05

Rated speed rpm : 900
rack travel mm : 14.15
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 224.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 6.0

BREAKAWAY

Rack travel in mm : 13.10
Rated speed rpm : 945
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : + 25.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + 2.0

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BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.10.94
Test oil : ISO 4113
Combination No. : 0402646885
Injection pump
Pump designation : PE6P120A72ORS7126
: -10
EP type number : 0412626929
Governor
Governor design. : RQV350...1050PA795
: -9
Governor no. : 0421813769
Cust. part No. : 1305080

Customer-spec. information
Customer : SCANIA
Motor : DS11 54,57

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750015
Outside diameter : 6.0

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x inside diameter : 3.0
x length mm : 600

REMARKS

Check and set without ROBO diaphragm

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 5.05
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 14.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 4.40
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1230

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

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Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 54.0
tolerance degree : ± 4.0

control lever
position degree : 102.0
tolerance degree : ± 4.0

rack travel mm : 13.10
Rated speed rpm : 1095
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1240
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

control lever
position degree : 23.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.40
Tolerance mm : ± 0.30

Rated speed rpm : 100

CRT mm min. : > 10.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 14.15
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 14.15
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.70
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 510
rack travel mm : 13.05
Tolerance mm : ± 0.05

Pressure hPa : 250
rack travel mm : 11.20
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 227.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

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BREAKAWAY

Rack travel in mm : 13.10
Rated speed rpm : 1095
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 4.40
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.10.94
Test oil : ISO 4113
Combination No. : 0402646892
Injection pump
Pump designation : PE6P120A72ORS7170
EP type number : 0412626829
Governor
Governor design. : RQ900PA758-12
Governor no. : 0421801500
Cust. part No. : 1305084

Customer-spec. information
Customer : SCANIA
Motor : DS 11

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test Lines : 1680750015
Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

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REMARKS

Check and set without ROBO diaphragam

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 5.05
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 850
Rack travel in mm : 12.55
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 247.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 7.0

Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 247.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 7.0
 Check tolerance
 cm³/1000S. : 10.0

RATED SPEED

control lever
 position degree : 86.0
 tolerance degree : + 4.0

TORQUE CONTROL

Rated speed rpm : 850
 rack travel mm : 12.55
 Tolerance mm : + 0.05

ANEROID/ALTITUDE
 COMPENSATOR TEST

SETTING

Rated speed rpm : 500

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Pressure hPa : 900
 rack travel mm : 12.55
 Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500
 rack travel mm : 9.90
 Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 575
 rack travel mm : 12.05
 Tolerance mm : + 0.05

Pressure hPa : 370
 rack travel mm : 10.85
 Tolerance mm : + 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 152.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 9.90
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 110.0
 Tolerance
 cm³/1000 strokes : + 20.0

Del. quantity
cm³/1000 strokes : 151.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 250

Rack travel in mm : 4.60
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1130

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 151.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

A10

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 61.0
tolerance degree : + 4.0

control lever
position degree : 116.0
tolerance degree : + 4.0

rack travel mm : 10.80
Rated speed rpm : 1145
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1285
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 64.0
tolerance degree : + 4.0

control lever
position degree : 9.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 4.60
Tolerance mm : + 0.10

Rated speed rpm : 150

CRT mm min. : > 5.80

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 250

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.85
Tolerance mm : ± 0.05

Rated speed rpm : 1100
rack travel mm : 11.85
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.85
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.10
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 11.55
Tolerance mm : ± 0.05

Pressure hPa : 220
rack travel mm : 10.80
Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 149.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 10.80
Rated speed rpm : 1145
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.10
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250
rack travel mm : 4.60
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.94
Test oil : ISO 4113
Combination No. : 0402646910
Injection pump
Pump designation : PE6P120A320RS7138
: -10
EP type number : 0412626922
Governor
Governor design. : RQV200...1100PA712
: -5
Governor no. : 0421813951
Cust. part No. : 1318823

Customer-spec. information
Customer : SCANIA
Motor : DSC908

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413025
Inlet press. bar : 2.5
Tolerance bar : + 0.1
Test nozzle holde
assembly : 1688901104
Opening pressure
bar : 251.5
Tolerance bar : + 1.5
Test lines : 1680750008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Check and set without ROBO diaphragam

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 4.45
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 13.15
Tolerance mm : + 0.05

Del. quantity cm ³ /1000 strokes	:	180.0
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Tolerance cm ³ /1000 strokes	:	+ 1.0
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Check tolerance cm ³ /1000S.	:	+ 4.0
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Spreed Tolerance cm ³ /1000 strokes	:	8.0
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Check tolerance cm ³ /1000S.	:	12.0
2nd speed rpm	:	250
Rack travel in mm	:	4.60
Tolerance mm	:	+ 0.30
Del. quantity cm ³ /1000 strokes	:	16.0
Tolerance cm ³ /1000 strokes	:	+ 3.0
Check tolerance cm ³ /1000S.	:	+ 6.0
Spreed Tolerance cm ³ /1000 strokes	:	4.0
Check tolerance cm ³ /1000S.	:	8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	:	- 1
Rated speed rpm	:	1130
Rack travel in mm	:	16.50
Tolerance mm	:	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	700
Aneroid pressure hPa	:	-
Del. quantity cm ³ /1000 strokes	:	180.0
Tolerance cm ³ /1000 strokes	:	+ 1.0
Check tolerance cm ³ /1000S.	:	+ 4.0

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Spreed Tolerance cm ³ /1000 strokes	:	8.0
Check tolerance cm ³ /1000S.	:	12.0

RATED SPEED

control lever position degree	:	63.0
tolerance degree	:	+ 4.0

control lever position degree	:	118.0
tolerance degree	:	+ 4.0

rack travel mm	:	12.10
Rated speed rpm	:	1145
Tolerance 1/min	:	+ 5

rack travel mm	:	4.00
Rated speed rpm	:	1290
Tolerance 1/min	:	+ 15

rack travel mm	:	0.50
Tolerance mm	:	+ 0.50
Rated speed rpm	:	1400

LOW IDLE

control lever position degree	:	64.0
tolerance degree	:	+ 4.0

control lever position degree	:	9.0
tolerance degree	:	+ 4.0

Testing:

Rated speed rpm	:	250
rack travel mm	:	4.60
Tolerance mm	:	+ 0.10

Rated speed rpm	:	150
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CRT mm min.	:	> 5.80
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CONTINUOUS-ACTION CONTROL

Rated speed rpm	:	250
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TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.15
Tolerance mm : ± 0.05

Rated speed rpm : 1100
rack travel mm : 13.15
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.15
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.10
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 480
rack travel mm : 12.35
Tolerance mm : ± 0.05

Pressure hPa : 220
rack travel mm : 10.80
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 12.10
Rated speed rpm : 1145
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.10
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250
rack travel mm : 4.60
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.94
Test oil : ISO 4113
Combination No. : 0402646911
Injection pump
Pump designation : PE6P120A32ORS7138
: -10Z
EP type number : 0412626923
Governor
Governor design. : RQ200/1100PA873-1
Governor no. : 0421801615

Cust. part No. : 1318821

Customer-spec. information
Customer : SCANIA
Motor : DSC9 07

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1688901104
Opening pressure
bar : 251.5
Tolerance bar : ± 1.5
Test lines : 1680750008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Check and set without ROBO diaphragam

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.45
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 151.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 250

Rack travel in mm : 4.60
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 151.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

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Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 44.0
tolerance degree : ± 4.0

control lever
position degree : 98.0
tolerance degree : ± 4.0

rack travel mm : 10.80
Rated speed rpm : 1145
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1305
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 63.0
tolerance degree : ± 4.0

control lever
position degree : 10.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 4.60
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 340
Tolerance 1/min : ± 20

Rated speed rpm : 150
CRT mm min. : > 5.80

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.85
Tolerance mm : ± 0.05

Rated speed rpm : 1100
rack travel mm : 11.85
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.85
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.10
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 11.55
Tolerance mm : ± 0.05

Pressure hPa : 220
rack travel mm : 10.80
Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 149.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 10.80
Rated speed rpm : 1145
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.10
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250
rack travel mm : 4.60
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

Tolerance
 cm³/1000 strokes : + 1.0

 Check tolerance
 cm³/1000S. : + 4.0

 Spreed
 Tolerance
 cm³/1000 strokes : 6.0

 Check tolerance
 cm³/1000S. : 9.0
 2nd speed rpm : 300
 Rack travel in mm : 4.70
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 22.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1000
 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 166.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0

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Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

control lever
 position degree : 49.0
 tolerance degree : + 4.0
 control lever
 position degree : 104.0
 tolerance degree : + 4.0
 rack travel mm : 11.20
 Rated speed rpm : 945
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1025
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1150

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : + 4.0
 control lever
 position degree : 15.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 4.70
 Tolerance mm : + 0.10
 Rated speed rpm : 100
 CRT mm min. : > 10.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
 rack travel mm : 12.25
 Tolerance mm : + 0.05

Rated speed rpm : 900
rack travel mm : 12.25
Tolerance mm : ± 0.05

**ANEROID/ALTITUDE
COMPENSATOR TEST**

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.25
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.80
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 360
rack travel mm : 11.85
Tolerance mm : ± 0.05

Pressure hPa : 250
rack travel mm : 11.20
Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 168.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 127.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

A20

Rack travel in mm : 11.20
Rated speed rpm : 945
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 295.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.01.95
Test oil : ISO 4113

Combination No. : 0402646993A

Injection pump
Pump designation : PE6P120A320LS7852-1
EP type number : 0412626910

Governor
Governor design. : RQ300/1050PA1030-18
Governor no. : 0421801746

Cust. part No. : 0230744502

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power kW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.10
Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 252.0

 Tolerance
 cm³/1000 strokes : ± 1.0

 Check tolerance
 cm³/1000S. : ± 4.0

 Spreed
 Tolerance
 cm³/1000 strokes : 5.0

 Check tolerance
 cm³/1000S. : 9.0

 2nd speed rpm : 300

 Rack travel in mm : 6.20
 Tolerance mm : ± 0.30
 Del. quantity
 cm³/1000 strokes : 19.0
 Tolerance
 cm³/1000 strokes : ± 3.0
 Check tolerance
 cm³/1000S. : ± 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

**(B) SETTING OF INJECTION PUMP
WITH GOVERNOR**

GUIDE SLEEVE POSITION

Rated speed rpm : 600

 Rack travel in mm : 20.00
 Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
 Aneroid pressure
 hPa : 1100
 Del. quantity
 cm³/1000 strokes : 252.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

control lever
 position degree : 100.0
 tolerance degree : ± 4.0

 rack travel mm : 14.10
 Rated speed rpm : 1098
 Tolerance 1/min : ± 8

 rack travel mm : 4.00
 Rated speed rpm : 1200
 Tolerance 1/min : ± 15

 rack travel mm : 0.75
 Tolerance mm : ± 0.75
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 5.50
 Tolerance mm : ± 0.10

 rack travel mm : 2.00
 Rated speed rpm : 400
 Tolerance 1/min : ± 20

 Rated speed rpm : 200

 CRT mm min. : > 8.50

TORQUE CONTROL

Rated speed rpm : 550
 rack travel mm : 15.10
 Tolerance mm : ± 0.05

 Rated speed rpm : 1050
 rack travel mm : 15.10
 Tolerance mm : ± 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST**

SETTING

Rated speed rpm : 400
Pressure hPa : 1100
rack travel mm : 15.10
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.15
Tolerance mm : ± 0.20

Rated speed rpm : 400

Pressure hPa : 250
rack travel mm : 10.05
Tolerance mm : ± 0.20

Pressure hPa : 550
rack travel mm : 13.85
Tolerance mm : ± 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -

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Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.10
Rated speed rpm : 1098
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.01.95
Test oil : ISO 4113

Combination No. : 0402646994A

Injection pump
Pump designation : PE6P120A320LS7852
EP type number : 0412626871

Governor
Governor design. : RQ300/950PA1032-13
Governor no. : 0421801747

Cust. part No. : 0230744202

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power kW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.10
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.20
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

**(B) SETTING OF INJECTION PUMP
WITH GOVERNOR**

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1100

Del. quantity
cm³/1000 strokes : 252.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 100.0
tolerance degree : ± 4.0

rack travel mm : 14.10
Rated speed rpm : 998
Tolerance 1/min : ± 8

rack travel mm : 4.00
Rated speed rpm : 1100
Tolerance 1/min : ± 15

rack travel mm : 0.75
Tolerance mm : ± 0.75
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 75.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 440
Tolerance 1/min : ± 20

Rated speed rpm : 200
CRT mm min. : > 8.80

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.10
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 15.10
Tolerance mm : ± 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST**

SETTING

Rated speed rpm : 400
Pressure hPa : 1100
rack travel mm : 15.10
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.15
Tolerance mm : ± 0.20

Rated speed rpm : 400

Pressure hPa : 150
rack travel mm : 10.05
Tolerance mm : ± 0.20

Pressure hPa : 550
rack travel mm : 13.85
Tolerance mm : ± 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -

A26

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.10
Rated speed rpm : 998
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.10.94
Test oil : ISO 4113
Combination No. : 0402648867
Injection pump
Pump designation : PE8P120A720/4LS7166
: -1
EP type number : 0412628897
Governor
Governor design. : RQ750PA758-7
Governor no. : 0421801490
Cust. part No. : 1305125

Customer-spec. information
Customer : SCANIA
Motor : DS 14

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Tolerance bar : + 0.1
Test nozzle holder
assembly : 1688901019
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1680750015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Check and set without ROBO diaphragm

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 5.05
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8
Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 12.55
Tolerance mm : + 0.05

Del. quantity cm ³ /1000 strokes	:	253.0
<hr/>		
Tolerance cm ³ /1000 strokes	:	± 1.0
<hr/>		
Check tolerance cm ³ /1000S.	:	± 4.0
<hr/>		
Speed Tolerance cm ³ /1000 strokes	:	7.0
<hr/>		
Check tolerance cm ³ /1000S.	:	10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	700
Aneroid pressure hPa	:	900
Del. quantity cm ³ /1000 strokes	:	253.0
Tolerance cm ³ /1000 strokes	:	± 1.0
Check tolerance cm ³ /1000S.	:	± 4.0
Speed Tolerance cm ³ /1000 strokes	:	7.0
Check tolerance cm ³ /1000S.	:	10.0

RATED SPEED

control lever position degree	:	30.0
tolerance degree	:	± 4.0
control lever position degree	:	89.0
tolerance degree	:	± 4.0

TORQUE CONTROL

Rated speed rpm	:	700
rack travel mm	:	12.55
Tolerance mm	:	± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm	:	500
Pressure hPa	:	900
rack travel mm	:	12.55
Tolerance mm	:	± 0.05

MEASUREMENT

Pressure hPa	:	-
Rated speed rpm	:	500
rack travel mm	:	9.90
Tolerance mm	:	± 0.20

Rated speed rpm	:	500
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Pressure hPa	:	365
rack travel mm	:	11.85
Tolerance mm	:	± 0.05

Pressure hPa	:	215
rack travel mm	:	10.90
Tolerance mm	:	± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	:	-
Rated speed rpm	:	500
Del. quantity cm ³ /1000 strokes	:	160.0
Tolerance cm ³ /1000 strokes	:	± 2.0
Check tolerance cm ³ /1000S.	:	± 4.0

Aneroid pressure hPa	:	-
Del. quantity cm ³ /1000 strokes	:	16.0
Tolerance cm ³ /1000 strokes	:	± 4.0
Check tolerance cm ³ /1000S.	:	± 6.0
Tolerance cm ³ /1000 strokes	:	4.0
Check tolerance cm ³ /1000S.	:	7.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.12.94
Test oil : ISO 4113
Combination No. : 0402648874
Injection pump
Pump designation : PE8P120A720LS7189
: -10
EP type number : 0412628893
Governor
Governor design. : RQV200...950PA736-8
Governor no. : 0421813815
Cust. part No. : 1303811

Customer-spec. information
Customer : SCANIA
Motor : DSC14 10

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1688901104
Opening pressure
bar : 251.5
Tolerance bar : ± 1.5
Test lines : 1680750008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Check and set without ROBO diaphragm

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 238.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 250

Rack travel in mm : 4.50
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1150

Rack travel in mm : 9.50
Tolerance mm : ± 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 238.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BC3

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 60.0
tolerance degree : ± 4.0

control lever
position degree : 94.0
tolerance degree : ± 4.0

rack travel mm : 12.00
Rated speed rpm : 995
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1115
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 45.0
tolerance degree : ± 4.0

control lever
position degree : 11.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 4.50
Tolerance mm : ± 0.10

Rated speed rpm : 150

CRT mm min. : > 5.80

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 275

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 13.05
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.05
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.00
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 525
rack travel mm : 11.75
Tolerance mm : ± 0.05

Pressure hPa : 320
rack travel mm : 10.50
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 224.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 995
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.00
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250
rack travel mm : 4.50
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.12.94
Test oil : ISO 4113

Combination No. : 0402648896

Injection pump
Pump designation : PE8P120A720LS7189
 : -10Q
EP type number : 0412628894

Governor
Governor design. : RQV200...950PA736-9
Governor no. : 0421814050

Cust. part No. : 1320645

Customer-spec. information
Customer : SCANIA
Motor : DSC14 08

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Tolerance l/h : + 10.0

Test nozzle holde
assembly : 1688901104

Opening pressure
bar : 251.5
Tolerance bar : + 1.5

Test lines : 1680750008

B05

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

Check and set without ROBO diaphragam

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 2- 7- 3- 4
 : - 5- 6- 8

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 2

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 220.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 150

Rack travel in mm : 4.50
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1150

Rack travel in mm : 9.50
Tolerance mm : ± 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

B06

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 60.0
tolerance degree : ± 4.0

control lever
position degree : 93.0
tolerance degree : ± 4.0

rack travel mm : 11.30
Rated speed rpm : 995
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1105
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 46.0
tolerance degree : ± 4.0

control lever
position degree : 11.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 4.50
Tolerance mm : ± 0.10

Rated speed rpm : 150

CRT mm min. : > 5.80

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.35
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 12.35
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.35
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.70
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 525
rack travel mm : 11.75
Tolerance mm : ± 0.05

Pressure hPa : 320
rack travel mm : 10.50
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 206.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 134.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

B07

BREAKAWAY

Rack travel in mm : 11.30
Rated speed rpm : 995
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.70
Tolerance mm : ± 0.20
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 150
rack travel mm : 4.50
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.12.94
Test oil : ISO 4113
Combination No. : 0402648897
Injection pump
Pump designation : PE8P120A720LS7189
: -10
EP type number : 0412628897
Governor
Governor design. : RQV200...950PA736-9
Governor no. : 0421814050
Cust. part No. : 1320643

Customer-spec. information
Customer : SCANIA
Motor : DSC14 10

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413025
Inlet press. bar : 2.5
Tolerance bar : + 0.1
Tolerance L/h : + 10.0
Test nozzle holder
assembly : 1688901104
Opening pressure
bar : 251.5
Tolerance bar : + 1.5
Test lines : 1680750008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

Check and set without ROBO diaphragm

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.05
Tolerance mm : + 0.05

Del. quantity cm ³ /1000 strokes	: 238.0
<hr/>	
Tolerance cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance cm ³ /1000S.	: ± 4.0
<hr/>	
Spreed Tolerance cm ³ /1000 strokes	: 8.0
<hr/>	
Check tolerance cm ³ /1000S.	: 12.0
2nd speed rpm	: 250
Rack travel in mm	: 4.50
Tolerance mm	: ± 0.30
Del. quantity cm ³ /1000 strokes	: 16.0
Tolerance cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spreed Tolerance cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1120
Rack travel in mm	: 9.50
Tolerance mm	: ± 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure hPa	: -
Del. quantity cm ³ /1000 strokes	: 238.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0

B09

Spreed Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

RATED SPEED

control lever position degree	: 60.0
tolerance degree	: ± 4.0
control lever position degree	: 94.0
tolerance degree	: ± 4.0
rack travel mm	: 12.00
Rated speed rpm	: 995
Tolerance 1/min	: ± 5
rack travel mm	: 4.00
Rated speed rpm	: 1115
Tolerance 1/min	: ± 15
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 1250

LOW IDLE

control lever position degree	: 46.0
tolerance degree	: ± 4.0
control lever position degree	: 11.0
tolerance degree	: ± 4.0

Testing:

Rated speed rpm	: 250
rack travel mm	: 4.50
Tolerance mm	: ± 0.10
Rated speed rpm	: 150
CRT mm min.	: > 5.80

CONTINUOUS-ACTION CONTROL

Rated speed rpm	: 300
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TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 13.05
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.05
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.70
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 525
rack travel mm : 11.75
Tolerance mm : ± 0.05

Pressure hPa : 320
rack travel mm : 10.50
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 224.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 134.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 995
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.70
Tolerance mm : ± 0.20
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 250
rack travel mm : 4.50
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.12.94
Test oil : ISO 4113

Combination No. : 0402648943

Injection pump
Pump designation : PE8P120A720LS7189
: -10
EP type number : 0412628893

Governor
Governor design. : RQV350...1050PA795
: -14
Governor no. : 0421814020

Cust. part No. : 1340518

Customer-spec. information
Customer : SCANIA
Motor : DSC14

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holde
assembly : 1688901104

Opening pressure
bar : 251.5
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

B11

x inside diameter : 2.0
x length mm : 600

REMARKS

Check and set without ROBO diaphragam

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-2-7-3-4
: -5-6-8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.25
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 216.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 350

Rack travel in mm : 4.60
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1150

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 46.0

control lever
position degree : 106.0
tolerance degree : ± 4.0

rack travel mm : 11.20
Rated speed rpm : 1095
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

control lever
position degree : 15.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : ± 0.10

Rated speed rpm : 250

CRT mm min. : > 7.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.25

Tolerance mm : ± 0.05
Rated speed rpm : 1050
rack travel mm : 12.25
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.25
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.00
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 525
rack travel mm : 11.75
Tolerance mm : ± 0.05

Pressure hPa : 320
rack travel mm : 10.50
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 199.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 11.20
Rated speed rpm : 1095
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.00
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.08.94
Test oil : ISO 4113
Combination No. : 0402648944
Injection pump
Pump designation : PE8P120A920/4LS7266
: -1
EP type number : 0412628898
Governor
Governor design. : RQ750PA758-15
Governor no. : 0421801660
Cust. part No. : 1340528

Customer-spec. information
Customer : SCANIA
Motor : DS 14

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413025
Inlet press. bar : 2.5
Test nozzle holder
assembly : 1688901104
Opening pressure
bar : 251.5
Tolerance bar : + 1.5
Test lines : 1680750008
Outside diameter : 6.0
x inside diameter : 2.0

B14

x length mm : 600

REMARKS

Check and set without ROBO diaphragm

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 5.05
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 14.95
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 287.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 759
guide sleeve
travel mm : 6.36
Tolerance mm : + 0.25

Rated speed rpm : 520
guide sleeve
travel mm : -5.69
Tolerance mm : + 0.25

Rated speed rpm : 850
guide sleeve
travel mm : 16.58
Tolerance mm : + 0.25

Rated speed rpm : 798
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 860
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 287.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 36.0
tolerance degree : + 4.0

control lever
position degree : 88.0
tolerance degree : + 4.0

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.95
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.95
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.00
Tolerance mm : + 0.20

Rated speed rpm : 500
Pressure hPa : 670
rack travel mm : 13.45
Tolerance mm : + 0.05

Pressure hPa : 450
rack travel mm : 12.20
Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.00
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.12.94
Test oil : ISO 4113
Combination No. : 0402648959

Injection pump
Pump designation : PE8P120A720LS7189
EP type number : 0412628893

Governor
Governor design. : RQV350...1100PA795
: -15
Governor no. : 0421814048

Cust. part No. : 1340524

Customer-spec. information
Customer : SCANIA
Motor : DSI1453A

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1688901104

Opening pressure
bar : 251.5
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

Check and set without ROBO diaphragam

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-2-7-3-4
: -5-6-8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 248.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 350

Rack travel in mm : 4.60
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1250

Rack travel in mm : 10.50
Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 248.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 47.0
tolerance degree : + 4.0

control lever
position degree : 105.0
tolerance degree : + 4.0

rack travel mm : 12.40
Rated speed rpm : 1145
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1275
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 4.0

control lever
position degree : 15.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 7.70

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.45
Tolerance mm : ± 0.05

Rated speed rpm : 1100
rack travel mm : 13.45
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.45
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.40
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 1100
rack travel mm : 12.75
Tolerance mm : ± 0.05

Pressure hPa : 740
rack travel mm : 11.30
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 223.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 12.40
Rated speed rpm : 1145
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.40
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.01.95
Test oil : ISO 4113
Combination No. : 0402648982
Injection pump
Pump designation : PE8P120A320LS7884
EP type number : 0412628900
Governor
Governor design. : RQV350...1200PA1197
Governor no. : 0421814116
Cust. part No. : 0250744102

Customer-spec. information
Customer : MTU
Motor : 8V-183-03
Power KW : 564.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Overflow quantity
min. l/h : 120
Tolerance l/h : ± 10.0
Test nozzle holder
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Lube oil : 1409918004

B20

Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.05
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 20.50
Tolerance mm : ± 0.50
Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1
Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 600
Rack travel in mm : 9.50

Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 260.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 3.80
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.53
Tolerance mm : + 0.20

Rated speed rpm : 1255
guide sleeve
travel mm : 8.31
Tolerance mm : + 0.15

Rated speed rpm : 1000
guide sleeve
travel mm : 5.83
Tolerance mm : + 0.25

Rated speed rpm : 407
guide sleeve
travel mm : 2.57
Tolerance mm : + 0.25

Rated speed rpm : 457
guide sleeve
travel mm : 3.13
Tolerance mm : + 0.25

Rated speed rpm : 610
guide sleeve
travel mm : 3.65
Tolerance mm : + 0.25

Rated speed rpm : 1360
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 1470
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1320

Rack travel in mm : 13.00
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 650
Del. quantity
cm³/1000 strokes : 260.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : + 4.0

rack travel mm : 13.00
Rated speed rpm : 1245

Tolerance 1/min : + 5
rack travel mm : 4.00
Rated speed rpm : 1345
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 64.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 3.80
Tolerance mm : + 0.10

Rated speed rpm : 250
CRT mm min. : > 5.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 9.50
Tolerance mm : + 0.05

Rated speed rpm : 1200
rack travel mm : 14.00
Tolerance mm : + 0.10

Rated speed rpm : 750
rack travel mm : 14.00
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 6.00
Tolerance mm : + 0.15

Pressure hPa : 500
rack travel mm : 7.20
Tolerance mm : + 0.05

Pressure hPa : 250
rack travel mm : 9.00
Tolerance mm : + 0.10

Pressure hPa : 1600
rack travel mm : 13.00
Tolerance mm : + 0.05

Pressure hPa : 1000
rack travel mm : 10.60
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 270
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 334.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 380.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 127.0

Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 1245
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 370.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 3.80
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.94
Test oil : ISO 4113
Combination No. : 0402676809
Injection pump
Pump designation : PE6P120A72ORS7126
: -10
EP type number : 0412626929
Governor
Governor design. : RSV350...1050P1A543
: -1
Governor no. : 0421833325
Cust. part No. : 1305082

Customer-spec. information
Customer : SCANIA
Motor : DS11 54,57

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901019
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1680750015
Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 600

REMARKS

Check and set without ROBO diaphragm

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 5.05
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 2

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 14.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 4.40
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 62.0
tolerance degree : ± 4.0

control lever
position degree : 112.0
tolerance degree : ± 4.0

rack travel mm : 13.10
Rated speed rpm : 1095
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1180
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 78.0
tolerance degree : ± 4.0

control lever
position degree : 28.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 3.90

Testing:

Rated speed rpm : 350
rack travel mm : 4.40
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 460
Tolerance 1/min : ± 30

Rated speed rpm : 100
CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : +- 0.05

Rated speed rpm : 1000
rack travel mm : 14.15
Tolerance mm : +- 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 14.15
Tolerance mm : +- 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.70
Tolerance mm : +- 0.20

Rated speed rpm : 500

Pressure hPa : 510
rack travel mm : 13.05
Tolerance mm : +- 0.05

Pressure hPa : 250
rack travel mm : 11.60
Tolerance mm : +- 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 227.0
Tolerance
cm³/1000 strokes : +- 4.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.0

BREAKAWAY

Rack travel in mm : 13.10
Rated speed rpm : 1095
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : +- 0.50
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 4.40
Tolerance mm : +- 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.94
Test oil : ISO 4113
Combination No. : 0402676813
Injection pump
Pump designation : PE6P120A720RS7188
: -10
EP type number : 0412626924
Governor
Governor design. : RSV350...1050P1A543
: -2
Governor no. : 0421833385
Cust. part No. : 1337551

Customer-spec. information
Customer : SCANIA
Motor : DS11 ALLVARV

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413025
Inlet press. bar : 2.5
Tolerance bar : + 0.1
Test nozzle holde
assembly : 1688901104
Opening pressure
bar : 251.5
Tolerance bar : + 1.5
Lube oil : 1409918004
Test lines : 1680750008

B27

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

Check and set without ROBO diaphragam

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.35
Tolerance mm : + 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes :	236.0
<hr/>	
Tolerance	
cm ³ /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	+ 4.0
<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes :	8.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	12.0
<hr/>	
2nd speed rpm :	350
<hr/>	
Rack travel in mm :	4.70
Tolerance mm :	+ 0.30
Del. quantity	
cm ³ /1000 strokes :	19.0
Tolerance	
cm ³ /1000 strokes :	+ 3.0
Check tolerance	
cm ³ /1000S. :	+ 6.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	4.0
Check tolerance	
cm ³ /1000S. :	8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree :	- 3
Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	700
Aneroid pressure	
hPa :	-

Del. quantity	
cm ³ /1000 strokes :	236.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S. :	+ 4.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	8.0
Check tolerance	
cm ³ /1000S. :	12.0

RATED SPEED

control lever	
position degree :	59.0
tolerance degree :	+ 4.0
<hr/>	
control lever	
position degree :	109.0
tolerance degree :	+ 4.0
<hr/>	
rack travel mm :	12.30
Rated speed rpm :	1095
Tolerance 1/min :	+ 5
<hr/>	
rack travel mm :	4.00
Rated speed rpm :	1150
Tolerance 1/min :	+ 15
<hr/>	
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1300

LOW IDLE

control lever	
position degree :	76.0
tolerance degree :	+ 4.0
<hr/>	
control lever	
position degree :	25.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	350
rack travel mm :	4.20

Testing:

Rated speed rpm :	350
rack travel mm :	4.70
Tolerance mm :	+ 0.10
<hr/>	
rack travel mm :	2.00

Rated speed rpm : 460
Tolerance 1/min : + 30
Rated speed rpm : 100
CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.35
Tolerance mm : + 0.05
Rated speed rpm : 1050
rack travel mm : 13.35
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.35
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.40
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 440
rack travel mm : 12.05
Tolerance mm : + 0.05

Pressure hPa : 270
rack travel mm : 11.00
Tolerance mm : + 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 6.0

C01

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1095
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.40
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : + 20.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 4.70
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113
Combination No. : 0402678813
Injection pump
Pump designation : PE8P120A720LS7125
 : -10
EP type number : 0412628891
Governor
Governor design. : RSV350...1050P1A512
 : -2
Governor no. : 0421833324
Cust. part No. : 1305131

Customer-spec. information
Customer : SCANIA
Motor : DS 14

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Tolerance bar : + 0.1
Test nozzle holder
assembly : 1688901019
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1680750015
Outside diameter : 6.0

C02

x inside diameter : 3.0
x length mm : 600

REMARKS

Check and set without ROBO diaphragam

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 2- 7- 3- 4
 : - 5- 6- 8

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.55
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 215.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 4.70
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 215.0

C03

Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 48.0
tolerance degree : ± 4.0

control lever
position degree : 98.0
tolerance degree : ± 4.0

rack travel mm : 12.50
Rated speed rpm : 1095
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1130
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 68.0
tolerance degree : ± 4.0

control lever
position degree : 18.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.20

Testing:

Rated speed rpm : 350
rack travel mm : 4.70
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 460
Tolerance 1/min : ± 30

Rated speed rpm : 100
CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.55
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 13.35
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.55
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.40
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 365
rack travel mm : 12.85
Tolerance mm : ± 0.05

Pressure hPa : 215
rack travel mm : 11.90
Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 207.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 12.50
Rated speed rpm : 1095
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 4.70
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113
Combination No. : 0402736801
Injection pump
Pump designation : PES6P110A120RS7186
EP type number : 0412716800
Governor
Governor design. : RQV350...1250PA924
: -1K
Governor no. : 0421815226
Cust. part No. :

Customer-spec. information
Customer : CDC
Motor : 6BTA

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2417413047
Overflow quantity
min. L/h : 165
Tolerance L/h : ± 5.0
Test nozzle holde
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 4.40
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 10.55
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 138.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 4.70
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1375

Rack travel in mm : 9.00
Tolerance mm : + 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 138.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 60.0
tolerance degree : + 4.0

rack travel mm : 9.50
Rated speed rpm : 1295
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1375
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1480

LOW IDLE

control lever
position degree : 15.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.70
Tolerance mm : + 0.10

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.55
Tolerance mm : + 0.05

Rated speed rpm : 1100
rack travel mm : 10.35
Tolerance mm : + 0.05

Rated speed rpm : 900
rack travel mm : 10.20
Tolerance mm : + 0.10

Rated speed rpm : 650
rack travel mm : 4.93
Tolerance mm : + 4.93

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 900
rack travel mm : 10.55
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 6.90
Tolerance mm : ± 0.20

Rated speed rpm : 1250

Pressure hPa : 200
rack travel mm : 7.45
Tolerance mm : ± 0.05

Pressure hPa : 330
rack travel mm : 8.60
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 9.50
Rated speed rpm : 1295
Tolerance 1/min : ± 5

LOW IDLE

Rated speed rpm : 350

C07

rack travel mm : 4.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113
Combination No. : 0402736855
Injection pump
Pump designation : PES6P120A120RS7206
EP type number : 0412726835
Governor
Governor design. : RQV350...1100PA964
: -9K
Governor no. : 0421815425
Cust. part No. : 3282061

Customer-spec. information
Customer : CUMMINS
Motor : 6CTA
Power KW : 190.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1680750008
Outside diameter : 6.0

C08

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 3.60
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
Tolerance : + 0.10
Check
tolerance °NW : + 0.23

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 12.00
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 156.0

<hr/>	
Tolerance	
cm ³ /1000 strokes	: + 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: + 4.0
<hr/>	
Spread	
Tolerance	
cm ³ /1000 strokes	: 5.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 350
<hr/>	
Rack travel in mm	: 5.20
Tolerance mm	: + 0.10
Del. quantity	
cm ³ /1000 strokes	: 20.5
Tolerance	
cm ³ /1000 strokes	: + 3.0
Check tolerance	
cm ³ /1000S.	: + 5.0
<hr/>	
Spread	
Tolerance	
cm ³ /1000 strokes	: 7.0
Check tolerance	
cm ³ /1000S.	: 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 350
guide sleeve	
travel mm	: 1.36
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1177
guide sleeve	
travel mm	: 8.80
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 828
guide sleeve	
travel mm	: 5.95
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 399
guide sleeve	
travel mm	: 1.98
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 449
guide sleeve	
travel mm	: 2.67

Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 530
guide sleeve	
travel mm	: 3.46
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1550
guide sleeve	
travel mm	: 13.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1375
<hr/>	
Rack travel in mm	: 11.00
Tolerance mm	: + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
Aneroid pressure	
hPa	: -
Del. quantity	
cm ³ /1000 strokes	: 156.0
Tolerance	
cm ³ /1000 strokes	: + 1.0
Check tolerance	
cm ³ /1000S.	: + 4.0
<hr/>	
Spread	
Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

RATED SPEED

control lever	
position degree	: 117.0
tolerance degree	: + 4.0
<hr/>	
rack travel mm	: 11.00
Rated speed rpm	: 1165
Tolerance 1/min	: + 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1285
Tolerance 1/min	: + 15
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1400

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 6.70

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.00
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 10.90
Tolerance mm : ± 0.10

Rated speed rpm : 400
rack travel mm : 10.10
Tolerance mm : ± 0.10

Rated speed rpm : 950
rack travel mm : 11.95
Tolerance mm : ± 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 1100
Pressure hPa : 1400
rack travel mm : 12.00
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 8.50

C10

Tolerance mm : ± 0.20

Rated speed rpm : 1100

Pressure hPa : 770
rack travel mm : 11.00
Tolerance mm : ± 0.05

Pressure hPa : 530
rack travel mm : 9.40
Tolerance mm : ± 0.20

START CUT-OUT

Rated speed rpm : > 100

Check
speed 1/min : > 80
Rated speed rpm : < 270

Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 158.5
Tolerance

cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 119.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1165
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 253.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113
Combination No. : 0402736856
Injection pump
Pump designation : PES6P110A120RS7213
EP type number : 0412716804
Governor
Governor design. : RQV350...1250PA964
: -26K
Governor no. : 0421815426
Cust. part No. : 3282240

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA
Power KW : 172.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1680750008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 4.40
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
Tolerance : + 0.10
Check
tolerance °NW : + 0.23

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 15.10
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 158.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 350

Rack travel in mm : 5.70
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 22.5

Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 5.0

Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.94
Tolerance mm : + 0.25

Rated speed rpm : 1346
guide sleeve
travel mm : 8.44
Tolerance mm : + 0.25

Rated speed rpm : 840
guide sleeve
travel mm : 4.58
Tolerance mm : + 0.25

Rated speed rpm : 403
guide sleeve
travel mm : 2.53
Tolerance mm : + 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 2.76

Tolerance mm : + 0.25
Rated speed rpm : 1620
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1440

Rack travel in mm : 9.00
Tolerance mm : + 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1800
Del. quantity
cm³/1000 strokes : 158.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 123.0
tolerance degree : + 4.0

rack travel mm : 15.30
Rated speed rpm : 1325
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1480
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.40
Tolerance mm : ± 0.10

Rated speed rpm : 250

CRT mm min. : > 7.20

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 15.10
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 13.70
Tolerance mm : ± 0.10

Rated speed rpm : 1250
rack travel mm : 16.30
Tolerance mm : ± 0.10

Rated speed rpm : 400
rack travel mm : 13.70
Tolerance mm : ± 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1800
rack travel mm : 16.30
Tolerance mm : ± 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 9.05
Tolerance mm : ± 0.20

Rated speed rpm : 1250

Pressure hPa : 450
rack travel mm : 10.75
Tolerance mm : ± 0.20

Pressure hPa : 1150
rack travel mm : 14.35
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 280
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 15.30
Rated speed rpm : 1325
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.50

Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 162.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 5.70
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 22.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113
Combination No. : 0402736857
Injection pump
Pump designation : PES6P110A12ORS7263
EP type number : 0412716808
Governor
Governor design. : RQV350...1250PA964
 : -27K
Governor no. : 0421815427
Cust. part No. : 3282462

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA
Power KW : 154.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413047
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.40
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
 : 4
Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 13.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 152.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1440

Rack travel in mm : 9.00
Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 63.0
tolerance degree : ± 4.0

control lever
position degree : 121.0

tolerance degree : ± 4.0

rack travel mm : 13.50
Rated speed rpm : 1310
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1450
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

control lever
position degree : 17.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : ± 0.10

Rated speed rpm : 250

CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.85
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 12.40
Tolerance mm : ± 0.10

Rated speed rpm : 1250
rack travel mm : 14.50
Tolerance mm : ± 0.10

Rated speed rpm : 400
rack travel mm : 11.65
Tolerance mm : ± 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 14.50
Tolerance mm : ± 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 9.35
Tolerance mm : ± 0.20

Rated speed rpm : 1250

Pressure hPa : 570
rack travel mm : 11.30
Tolerance mm : ± 0.20

Pressure hPa : 775
rack travel mm : 13.15
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 270
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 13.50
Rated speed rpm : 1310
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.01.95
Test oil : ISO 4113

Combination No. : 0402746918

Injection pump
Pump designation : PES6P120A720LS7373
EP type number : 0412726937

Governor
Governor design. : RQ300/1100PA1013
Governor no. : 0421801599

Cust. part No. : 0220743602

Customer-spec. information

Customer : MB-NFZ
Motor : OM447 hLA
Power KW : 220.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Lube oil : 1409918004

C19

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.80

Rack travel in mm : 13.80
Tolerance mm : \pm 0.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 206.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.30
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1159
guide sleeve
travel mm : 6.35
Tolerance mm : \pm 0.10

Rated speed rpm : 1100
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 417
guide sleeve
travel mm : 4.48
Tolerance mm : \pm 0.10

Rated speed rpm : 510
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1320
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 206.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 98.0
tolerance degree : \pm 4.0

rack travel mm : 13.50
Rated speed rpm : 1153
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1240
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75

Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.30
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : ± 20

Rated speed rpm : 200
CRT mm min. : > 8.20

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 13.80
Tolerance mm : ± 0.10

Rated speed rpm : 1100
rack travel mm : 14.50
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 14.50
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

MEASUREMENT

Pressure hPa : 150
rack travel mm : -2.10
Tolerance mm : ± 0.10

Pressure hPa : 350
rack travel mm : -0.60
Tolerance mm : ± 0.10

Pressure hPa : 800
rack travel mm : 0.20
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 222.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.50
Rated speed rpm : 1153
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 230.0

Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.30
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.01.95
Test oil : ISO 4113

Combination No. : 0402746952

Injection pump
Pump designation : PES6P120A320RS7294
EP type number : 0412726895

Governor
Governor design. : RQV275...1000PA1001
: -2
Governor no. : 0421813989

Cust. part No. : CCEP-5136 66-214

Customer spec. information

Customer : RVI
Motor : MIDR 063540 N/3
Power KW : 283.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2417413071

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750089

C23

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 19.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : + 0.30
Check
tolerance *NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : -7.25

Tolerance mm	: ± 0.30
<hr/>	
Del. quantity cm ³ /1000 strokes	: 74.0
<hr/>	
Tolerance cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance cm ³ /1000S.	: ± 4.0
<hr/>	
Spread	
<hr/>	
Tolerance cm ³ /1000 strokes	: 4.0
<hr/>	
Check tolerance cm ³ /1000S.	: 7.0
<hr/>	
Rated speed rpm	: 600
<hr/>	
Rack travel in mm	: 13.35
Tolerance mm	: ± 0.05
<hr/>	
Del. quantity cm ³ /1000 strokes	: 290.0
<hr/>	
Tolerance cm ³ /1000 strokes	: ± 2.0
<hr/>	
Check tolerance cm ³ /1000S.	: ± 5.0
<hr/>	
Spread	
<hr/>	
Tolerance cm ³ /1000 strokes	: 8.0
<hr/>	
Check tolerance cm ³ /1000S.	: 12.0
<hr/>	
2nd speed rpm	: 300
<hr/>	
Rack travel in mm	: -8.20
Tolerance mm	: ± 0.20
Del. quantity cm ³ /1000 strokes	: 31.0
Tolerance cm ³ /1000 strokes	: ± 2.5
Check tolerance cm ³ /1000S.	: ± 5.0
<hr/>	
Spread	
<hr/>	
Tolerance cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

C24

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve travel mm	: 1.66
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm	: 1086
guide sleeve travel mm	: 8.46
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm	: 773
guide sleeve travel mm	: 6.09
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 343
guide sleeve travel mm	: 2.33
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 393
guide sleeve travel mm	: 2.99
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 490
guide sleeve travel mm	: 3.81
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 1370
guide sleeve travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1200
<hr/>	
Rack travel in mm	: 12.20
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure hPa	: 1000
Del. quantity cm ³ /1000 strokes	: 290.0
Tolerance cm ³ /1000 strokes	: ± 2.0

Check tolerance
cm³/1000S. : + 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 301.0
tolerance degree : + 4.0

rack travel mm : -1.00
Rated speed rpm : 1070
Tolerance 1/min : + 5

rack travel mm : -9.30
Rated speed rpm : 1205
Tolerance 1/min : + 15

rack travel mm : -12.85
Tolerance mm : + 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 247.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -8.20
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm max. : < -6.80

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 365

TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1000
Tolerance mm : + 0.10

Rated speed rpm : 600

C25

rack travel mm : -4.50
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -3.80
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 240
rack travel mm : -2.60
Tolerance mm : + 0.20

Pressure hPa : 480
rack travel mm : -0.75
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 195
Check
speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 74.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : 1000

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 7.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 167.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1070
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : -8.20
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : ± 2.5
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.01.95
Test oil : ISO 4113

Combination No. : 0402746961

Injection pump
Pump designation : PES6P120A720RS7292
: -1
EP type number : 0412726939

Governor
Governor design. : RQV350...1150PA1104
: -2K
Governor no. : 0421815372

Cust. part No. : 0250741202

Customer spec. information
Customer : MB-NFZ
Motor : OM366LA
Power Kw : 142.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

C27

Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

*NW after s.o.d. : 3.0
S.o.d. blocking
Barrel no. : 1

*NW after s.o.d. : 3.0

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.50
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 285.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 350

Rack travel in mm : 7.30
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.84
Tolerance mm : + 0.25

Rated speed rpm : 1208
guide sleeve
travel mm : 9.41
Tolerance mm : + 0.25

Rated speed rpm : 836
guide sleeve
travel mm : 5.58
Tolerance mm : + 0.25

Rated speed rpm : 367
guide sleeve
travel mm : 1.96
Tolerance mm : + 0.25

Rated speed rpm : 417
guide sleeve
travel mm : 2.46
Tolerance mm : + 0.25

Rated speed rpm : 510
guide sleeve
travel mm : 3.11
Tolerance mm : + 0.25

Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1315

Rack travel in mm : 13.50
Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 285.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 108.0
tolerance degree : + 4.0

rack travel mm : 13.50
Rated speed rpm : 1195
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1320
Tolerance 1/min : ± 15

rack travel mm : 0.70
Tolerance mm : ± 0.70
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 62.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : ± 0.10

Rated speed rpm : 250

CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.50
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 14.45
Tolerance mm : ± 0.10

Rated speed rpm : 750
rack travel mm : 13.70
Tolerance mm : ± 0.10

Rated speed rpm : 600
rack travel mm : 13.65
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1500

DO1

rack travel mm : 14.50
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1150
rack travel mm : 11.30
Tolerance mm : ± 0.15

Rated speed rpm : 1150

Pressure hPa : 870
rack travel mm : 13.70
Tolerance mm : ± 0.05

Pressure hPa : 380
rack travel mm : 12.00
Tolerance mm : ± 0.20

START CUT-OUT

Rated speed rpm : > 100

Check
speed 1/min : > 80
Rated speed rpm : < 270
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 280.0

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 284.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 13.50
Rated speed rpm : 1195
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.50
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 7.30
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.01.95
Test oil : ISO 4113
Combination No. : 0402746993
Injection pump
Pump designation : PES6P120A720LS7341
EP type number : 0412726913
Governor
Governor design. : RQV350...1150PA1159
Governor no. : 0421814099
Cust. part No. : 0250742302

Customer-spec. information
Customer : MTU
Motor : 6-R-183
Power KW : 440.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Tolerance l/h : ± 10.0
Test nozzle holder
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Lube oil : 1409918004

Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.05
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 20.50
Tolerance mm : ± 0.50
Firing order : 6- 2- 4- 1- 5-
: 3
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 10.20
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes	: 273.0
<hr/>	
Tolerance	
cm ³ /1000 strokes	: + 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: + 4.0
<hr/>	
Spread	
Tolerance	
cm ³ /1000 strokes	: 6.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 350
<hr/>	
Rack travel in mm	: 4.10
Tolerance mm	: + 0.30
Del. quantity	
cm ³ /1000 strokes	: 17.0
Tolerance	
cm ³ /1000 strokes	: + 3.0
Check tolerance	
cm ³ /1000S.	: + 6.0
Spread	
Tolerance	
cm ³ /1000 strokes	: 6.0
Check tolerance	
cm ³ /1000S.	: 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 350
guide sleeve	
travel mm	: 1.53
Tolerance mm	: + 0.15
<hr/>	
Rated speed rpm	: 1206
guide sleeve	
travel mm	: 8.35
Tolerance mm	: + 0.20
<hr/>	
Rated speed rpm	: 950
guide sleeve	
travel mm	: 5.78
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 416
guide sleeve	
travel mm	: 2.77
Tolerance mm	: + 0.25

Rated speed rpm	: 466
guide sleeve	
travel mm	: 3.35
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 600
guide sleeve	
travel mm	: 3.83
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1308
guide sleeve	
travel mm	: 10.00
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1410
guide sleeve	
travel mm	: 11.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1260
<hr/>	
Rack travel in mm	: 13.00
Tolerance mm	: + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure	
hPa	: 800
Del. quantity	
cm ³ /1000 strokes	: 273.0
Tolerance	
cm ³ /1000 strokes	: + 1.0
Check tolerance	
cm ³ /1000S.	: + 4.0
Spread	
Tolerance	
cm ³ /1000 strokes	: 6.0
Check tolerance	
cm ³ /1000S.	: 9.0

RATED SPEED

control lever	
position degree	: 120.0
tolerance degree	: + 4.0
<hr/>	
rack travel mm	: 13.50
Rated speed rpm	: 1195
Tolerance 1/min	: + 5

rack travel mm : 4.00
Rated speed rpm : 1300
Tolerance 1/min : ± 15

rack travel mm : 0.75
Tolerance mm : ± 0.75
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 65.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.10
Tolerance mm : ± 0.10

Rated speed rpm : 250
CRT mm min. : > 5.60

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 10.20
Tolerance mm : ± 0.05

Rated speed rpm : 1150
rack travel mm : 14.50
Tolerance mm : ± 0.10

Rated speed rpm : 800
rack travel mm : 14.50
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 6.20
Tolerance mm : ± 0.10

Pressure hPa : 200
rack travel mm : 6.55
Tolerance mm : ± 0.05

Pressure hPa : 400
rack travel mm : 8.40
Tolerance mm : ± 0.10

Pressure hPa : 1300
rack travel mm : 11.70
Tolerance mm : ± 0.05

Pressure hPa : 1700
rack travel mm : 13.80
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 220
Check
speed 1/min : > 200
Rated speed rpm : < 270
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 344.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 4.5
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 127.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.50
Rated speed rpm : 1195
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 410.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 4.10
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19.01.95
Test oil : ISO 4113
Combination No. : 0403274005
Injection pump Pump designation : PES4M100/720RS1519
EP type number : 0413204017
Governor Governor design. : RSV350...1200MWA356
Governor no. : 0420085231
Cust. part No. : 0250740802

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 40
Tolerance °C : +- 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder assembly : 1688901101
Opening pressure bar : 208.5
Tolerance bar : +- 1.5
Test lines : 1680750089
Outside diameter : 8.0

D07

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant. per values

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : +- 1.0
Prestroke mm : 4.55
Tolerance mm : +- 0.05
test only : +- 0.10
Rack travel in mm : 21.00
Firing order : 1-3-4-2
Phasing : 0-90-180-270
Tolerance : +- 0.50
Check tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1200
Rack travel in mm : 13.90
Tolerance mm : +- 0.05
Del. quantity cm3/1000 strokes : 126.0
Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000S. : +- 4.0
Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1400

Del. quantity
cm³/1000 strokes : 126.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

RATED SPEED

control lever
position degree : 96.0
tolerance degree : ± 4.0

rack travel mm : 12.90
Rated speed rpm : 1245
Tolerance 1/min : ± 5

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1400

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 3.90

Testing:

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 13.90
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400
rack travel mm : 13.90
Tolerance mm : ± 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.10
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 600

rack travel mm : 13.10
Tolerance mm : + 0.10

Pressure hPa : 350
rack travel mm : 11.60
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 124.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 1245
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

D09

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.01.95
Test oil : ISO 4113
Combination No. : 0403274006
Injection pump
Pump designation : PES4MW100/720RS1519
: -3
EP type number : 0413204018
Governor
Governor design. : RSV350...1200MWA356
: -1
Governor no. : 0420085232
Cust. part No. : 0250740702

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1680750089
Outside diameter : 8.0

D10

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 86.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Speed

Tolerance
 cm³/1000 strokes : 4.5

Check tolerance
 cm³/1000S. : 7.0

Del. quantity
 cm³/1000 strokes : 12.0

Tolerance
 cm³/1000 strokes : + 2.0

Check tolerance
 cm³/1000S. : + 4.5

Spreed
 Tolerance
 cm³/1000 strokes : 2.0

Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : + 0.20

governor spring
 pre-tension
 click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure
 hPa : 1400

Del. quantity
 cm³/1000 strokes : 86.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 3.0

Spreed
 Tolerance
 cm³/1000 strokes : 4.5

Check tolerance
 cm³/1000S. : 7.0

RATED SPEED

control lever
 position degree : 96.0

tolerance degree : + 4.0

rack travel mm : 10.15

Rated speed rpm : 1245

Tolerance 1/min : + 5

rack travel mm : 1.00

Tolerance mm : + 0.70

Rated speed rpm : 1400

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350

rack travel mm : 4.00

Testing:

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200

rack travel mm : 11.15

Tolerance mm : + 0.05

Rated speed rpm : 750

rack travel mm : 11.15

Tolerance mm : + 0.10

ANEROID/ALTITUDE
 COMPENSATOR TEST

SETTING

Rated speed rpm : 500

Pressure hPa : 1500

rack travel mm : 11.15

Tolerance mm : + 0.10

MEASUREMENT

Pressure hPa : -

Rated speed rpm : 500

Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 250

rack travel mm : 0.30

Tolerance mm : \pm 0.10

Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 71.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.15
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.01.95
Test oil : ISO 4113
Combination No. : 0403276009
Injection pump
Pump designation : PES6MM100/720RS1517
: -2
EP type number : 0413206019
Governor
Governor design. : RSV350...1200MWOA357
Governor no. : 0420085233
Cust. part No. : 0250740402

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Set pneumatic shutoff device to control-rod stop = 0.5...1.5 mm control-rod travel at 4.5 bar atmospheric pressure.

Test hydr. locking device for starting with 800...1200 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 21.00
Firing order : 1-5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 13.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 118.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spreed
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1300

Del. quantity
cm³/1000 strokes : 118.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

RATED SPEED

control lever
position degree : 108.0
tolerance degree : ± 4.0

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1450

rack travel mm : 4.00
Rated speed rpm : 1375

rack travel mm : 12.30
Rated speed rpm : 1245
Tolerance 1/min : ± 5

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 3.90

Testing:

rack travel mm : 2.00
Rated speed rpm : 430

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 13.30
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 13.30
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 13.30
Tolerance mm : ± 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 3.00
Tolerance mm : ± 0.10

Pressure hPa : 300
rack travel mm : 1.20
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : ± 5.0

Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.01.95
Test oil : ISO 4113

Combination No. : 0403476140

Injection pump
Pump designation : PES6MW100/720RS1129
: -2
EP type number : 0413406140

Governor
Governor design. : RSV350...1200MWA363
Governor no. : 0420085246

Cust. part No. : 0260741902

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 A
Power KW : 114.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Set pneumatic shutoff device to control-rod stop = 0.5...1.5 mm control-rod travel at 4.5 bar atmospheric pressure.

Test hydr. locking device for starting with 800...1200 hPa air pressure.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 10.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 84.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Del. quantity
cm³/1000 strokes : 11.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure
hPa : 750

Del. quantity
cm³/1000 strokes : 84.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

D17

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

RATED SPEED

control lever
position degree : 104.0

tolerance degree : ± 4.0

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1450

rack travel mm : 4.00

Rated speed rpm : 1340

rack travel mm : 9.90

Rated speed rpm : 1248

Tolerance 1/min : ± 8

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350

rack travel mm : 6.15

Testing:

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200

rack travel mm : 10.95

Tolerance mm : ± 0.05

Rated speed rpm : 600

rack travel mm : 11.75

Tolerance mm : ± 0.10

Rated speed rpm : 1000

rack travel mm : 11.10

Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 750
rack travel mm : 11.75
Tolerance mm : ± 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : ± 0.05

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : 1.75
Tolerance mm : ± 0.10

Pressure hPa : 300
rack travel mm : 1.15
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 750
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 79.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 88.0

Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.01.95
Test oil : ISO 4113

Combination No. : 0403476141

Injection pump
Pump designation : PES6MW100/72ORS1144
EP type number : 0413406138

Governor
Governor design. : RSV350...1300MWOA364
Governor no. : 0420085247

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM 366 LA
Power KW : 127.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0

D19

x length mm : 600

REMARKS

Set pneumatic shutoff device to
control-rod stop = 0.5...1.5 mm
control-rod travel at 4.5 bar
atmospheric pressure.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 82.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Del. quantity
cm³/1000 strokes : 11.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 4.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 82.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

RATED SPEED

control lever
position degree : 107.0
tolerance degree : + 4.0

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1550

rack travel mm : 4.00
Rated speed rpm : 1445

rack travel mm : 10.60
Rated speed rpm : 1343
Tolerance 1/min : + 8

LOW IDLE

Testing:

Rated speed rpm : 350
rack travel mm : 6.55
Tolerance mm : + 0.35

rack travel mm : 2.00
Rated speed rpm : 470
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.65
Tolerance mm : + 0.05

Rated speed rpm : 900
rack travel mm : 11.95
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 900

Del. quantity
cm³/1000 strokes : 77.5
Tolerance
cm³/1000 strokes : + 1.5

Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : +- 5.0
Check tolerance
cm³/1000S. : +- 8.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.12.94
Test oil : ISO 4113
Combination No. : 0403486105
Injection pump
Pump designation : PES6MW100/321RS1231
EP type number : 0413406225
Governor
Governor design. : RSV300...1100MWOA343
: -1
Governor no. : 0420085209
Cust. part No. : 3-7263

Customer spec. information

Customer : MAN
Motor : D0826LE 522
Power KW : 154.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413047
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : + 1.5
Test lines : 1680750008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 3.55
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1075
Rack travel in mm : 12.10
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 144.0

Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spread Tolerance cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 7.5
Del. quantity cm ³ /1000 strokes	: 11.0
Tolerance cm ³ /1000 strokes	: ± 2.0
Check tolerance cm ³ /1000S.	: ± 4.5
Spread Tolerance cm ³ /1000 strokes	: 3.5
Check tolerance cm ³ /1000S.	: 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.65
Tolerance mm	: ± 0.35
governor spring pre-tension click setting x	: 5.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1075
Aneroid pressure hPa	: 1000
Del. quantity cm ³ /1000 strokes	: 144.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spread	

Tolerance cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 7.5

RATED SPEED

control lever position degree	: 104.0
tolerance degree	: ± 4.0
rack travel mm	: 11.10
Rated speed rpm	: 1130
Tolerance 1/min	: ± 5
rack travel mm	: 4.00
Rated speed rpm	: 1220
Tolerance 1/min	: ± 15
rack travel mm	: 1.00
Tolerance mm	: ± 0.70
Rated speed rpm	: 1350
rack travel mm	: 4.00

LOW IDLE

control lever position degree	: 76.0
tolerance degree	: ± 4.0

Testing:

Rated speed rpm	: 300
rack travel mm	: 5.00
Tolerance mm	: ± 0.10
rack travel mm	: 2.00
Rated speed rpm	: 380
Tolerance 1/min	: ± 30
Rated speed rpm	: 100
CRT mm min.	: > 19.00

TORQUE CONTROL

Rated speed rpm	: 1075
rack travel mm	: 12.10
Tolerance mm	: ± 0.05
Rated speed rpm	: 900
rack travel mm	: 12.35
Tolerance mm	: ± 0.05

Rated speed rpm : 600
rack travel mm : 12.40
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.40
Tolerance mm : + 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.45
Tolerance mm : + 0.05

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 11.75
Tolerance mm : + 0.15

Pressure hPa : 150
rack travel mm : 9.75
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 146.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 76.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

BREAKAWAY

Rack travel in mm : 11.10
Rated speed rpm : 1130
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.01.95
Test oil : ISO 4113
Combination No. : 0401846759
Injection pump
Pump designation : PE6P110A32ORS3108Y
EP type number : 0411816729
Governor
Governor design. : RQV250...1100PA920
: -1
Governor no. : 0421815778
Cust. part No. : 469608 P03

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : THD100EC
Power KW : 180.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1457413010
Inlet press. bar : 1.5
Tolerance bar : + 0.1
Test nozzle holde
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : + 1.5
Test Lines : 1680750089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 3.05
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 139.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

2nd speed rpm : 250

Rack travel in mm : 5.30
Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1175

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 139.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 65.0
tolerance degree : ± 4.0

rack travel mm : 10.15
Rated speed rpm : 1165
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1240
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 12.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 150
CRT mm min. : > 6.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 338

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.15
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.70
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 470
rack travel mm : 1.20

Tolerance mm : \pm 0.10
Pressure hPa : 260
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.15
Rated speed rpm : 1165
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 250
rack travel mm : 5.30
Tolerance mm : \pm 0.10

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 26.01.95
Test oil : ISO 4113
Combination No. : 0401846760
Injection pump
Pump designation : PE6P110A320RS3108X
EP type number : 0411816730
Governor
Governor design. : RQV250...1100PA920
Governor no. : 0421813779
Cust. part No. : 469609-P07 RELEASED

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : THD102

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 2417413046
Inlet press. bar : 1.5
Tolerance bar : + 0.1
Test nozzle holde assembly : 0681343009
Opening pressure bar : 173.5
Tolerance bar : + 1.5
Test lines : 1680750089
Outside diameter : 8.0

D28

x inside diameter : 3.0
x length mm : 600

REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant. per values

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 3.05
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 9.70
Tolerance mm : + 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 12.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 166.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1175

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 65.0
tolerance degree : ± 4.0

control lever
position degree : 116.0

ED1

tolerance degree : ± 4.0

rack travel mm : 11.35
Rated speed rpm : 1165
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1240
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 64.0
tolerance degree : ± 4.0

control lever
position degree : 12.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.30
Tolerance mm : ± 0.10

Rated speed rpm : 150
CRT mm min. : > 6.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 330

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.35
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.50
Tolerance mm : ± 0.15

Rated speed rpm : 500
Pressure hPa : 760
rack travel mm : 2.50
Tolerance mm : ± 0.15

Pressure hPa : 270
rack travel mm : 0.25
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 11.35
Rated speed rpm : 1165
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.11.94
Test oil : ISO 4113

Combination No. : 0401846971

Injection pump
Pump designation : PE6P110A32DRS3302Z
EP type number : 0411816789

Governor
Governor design. : RQ300/1000PA1012-1
Governor no. : 0421801648

Cust. part No. : 1266367

Customer-spec. information
Customer : DAF
Motor : LS 195 M
Power KW : 195.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : + 20.0

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1680750089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.75
Tolerance mm : + 0.05
test only : + 0.10

Rack travel in mm : 14.00
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.95
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 166.0

Tolerance
cm³/1000 strokes : + 1.0

<hr/>	
Check tolerance	
cm ³ /1000S.	: ± 3.5
<hr/>	
Spread	
Tolerance	
cm ³ /1000 strokes	: 4.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 7.5
<hr/>	
2nd speed rpm	: 300
<hr/>	
Rack travel in mm	: 7.50
Tolerance mm	: ± 0.10
Del. quantity	
cm ³ /1000 strokes	: 30.0
Tolerance	
cm ³ /1000 strokes	: ± 2.5
Check tolerance	
cm ³ /1000S.	: ± 5.0
Spread	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 11.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve	
travel mm	: 2.07
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm	: 1060
guide sleeve	
travel mm	: 6.35
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm	: 1000
guide sleeve	
travel mm	: 6.00
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm	: 373
guide sleeve	
travel mm	: 5.01
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm	: 440
guide sleeve	
travel mm	: 6.00
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm	: 1210

E04

guide sleeve	
travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 600
<hr/>	
Rack travel in mm	: 20.00
Tolerance mm	: ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure	
hPa	: -
Del. quantity	
cm ³ /1000 strokes	: 166.0
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 3.5
Spread	
Tolerance	
cm ³ /1000 strokes	: 4.0
Check tolerance	
cm ³ /1000S.	: 7.5

RATED SPEED

control lever	
position degree	: 97.0
tolerance degree	: ± 4.0
<hr/>	
rack travel mm	: 12.95
Rated speed rpm	: 1052
Tolerance 1/min	: ± 8
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1125
Tolerance 1/min	: ± 15
<hr/>	
rack travel mm	: 0.75
Tolerance mm	: ± 0.75
Rated speed rpm	: 1250

LOW IDLE

control lever	
position degree	: 73.0
tolerance degree	: ± 4.0

Testing:

Rated speed rpm	: 300
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rack travel mm : > 6.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 350
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 10.00

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 13.95
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 13.95
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 13.95
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 12.20
Tolerance mm : + 0.10

Rated speed rpm : 600

Pressure hPa : 480
rack travel mm : 13.55
Tolerance mm : + 0.05

Pressure hPa : 340
rack travel mm : 12.60
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 126.0

Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.5

BREAKAWAY

Rack travel in mm : 12.95
Rated speed rpm : 1052
Tolerance 1/min : + 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity
cm³/1000 strokes : 350.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 23.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 7.50
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : + 2.5
Check tolerance
cm³/1000S. : + 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.01.95
Test oil : ISO 4113
Combination No. : 0401846989
Injection pump
Pump designation : PE6P110A320RS3108X
EP type number : 0411816730
Governor
Governor design. : RQV250...1100PA920
 : -8
Governor no. : 0421814104
Cust. part No. : 425662
 : -P02 RELEASED

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : THD101,102,TD102
Power kW : 197.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2417413046
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1680750089

E06

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 3.05
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
 : 4
Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °Nw : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 12.35
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 166.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 1.19
Tolerance mm : ± 0.25

Rated speed rpm : 1176
guide sleeve
travel mm : 8.29
Tolerance mm : ± 0.25

Rated speed rpm : 1090
guide sleeve
travel mm : 6.95
Tolerance mm : ± 0.25

Rated speed rpm : 387
guide sleeve
travel mm : 2.96
Tolerance mm : ± 0.25

Rated speed rpm : 437
guide sleeve
travel mm : 3.71
Tolerance mm : ± 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 4.67
Tolerance mm : ± 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1175

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 65.0
tolerance degree : ± 4.0

control lever
position degree : 119.0
tolerance degree : ± 4.0

rack travel mm : 11.35
Rated speed rpm : 1165
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1240
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 64.0
tolerance degree : ± 4.0

control lever
position degree : 12.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.30
Tolerance mm : + 0.10

Rated speed rpm : 150

CRT mm min. : > 6.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 330

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.35
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.50
Tolerance mm : + 0.15

Rated speed rpm : 500

Pressure hPa : 760
rack travel mm : 2.50
Tolerance mm : + 0.15

Pressure hPa : 270
rack travel mm : 0.25
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

E08

BREAKAWAY

Rack travel in mm : 11.35
Rated speed rpm : 1165
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.50
Tolerance mm : + 0.15

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.01.95
Test oil : ISO 4113
Combination No. : 0401846990
Injection pump
Pump designation : PE6P120A32ORS3118
EP type number : 0411826726
Governor
Governor design. : RQV250...1100PA920
: -9
Governor no. : 0421814105
Cust. part No. : 425663-P0? (P03)

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : THD 102 KD
Power KW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2417413046
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1688901019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750075
Outside diameter : 8.0

ED9

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 2.65
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 13.25
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 223.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spread
 Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
 guide sleeve
 travel mm : 1.19
 Tolerance mm : + 0.25

Rated speed rpm : 1146
 guide sleeve
 travel mm : 7.80
 Tolerance mm : + 0.25

Rated speed rpm : 1081
 guide sleeve
 travel mm : 6.82
 Tolerance mm : + 0.25

Rated speed rpm : 387
 guide sleeve
 travel mm : 2.96
 Tolerance mm : + 0.25

Rated speed rpm : 437
 guide sleeve
 travel mm : 3.71
 Tolerance mm : + 0.25

Rated speed rpm : 520
 guide sleeve
 travel mm : 4.67
 Tolerance mm : + 0.25

Rated speed rpm : 1370
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1185

Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 223.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

control lever
 position degree : 62.0
 tolerance degree : + 4.0

control lever
 position degree : 117.0
 tolerance degree : + 4.0

rack travel mm : 12.25
 Rated speed rpm : 1135
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1225
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 64.0
 tolerance degree : + 4.0

control lever
 position degree : 9.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 150

CRT mm min. : $>$ 6.20

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 310

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.00
Tolerance mm : \pm 0.15

Rated speed rpm : 500

Pressure hPa : 850
rack travel mm : 3.70
Tolerance mm : \pm 0.15

Pressure hPa : 160
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 134.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.25
Rated speed rpm : 1135
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.00
Tolerance mm : \pm 0.15

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.01.95
Test oil : ISO 4113
Combination No. : 0401846991
Injection pump
Pump designation : PE6P110A32ORS3108-1
EP type number : 0411816757
Governor
Governor design. : RQV250...1100PA920
: -10
Governor no. : 0421814106
Cust. part No. : 425823 P02 RELEASED

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : THD 102 KB
Power KW : 212.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2417413046
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1680750089
Outside diameter : 8.0

E12

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 3.05
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 14.30
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 191.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 1.19
Tolerance mm : ± 0.25

Rated speed rpm : 1146
guide sleeve
travel mm : 7.81
Tolerance mm : ± 0.25

Rated speed rpm : 1081
guide sleeve
travel mm : 6.83
Tolerance mm : ± 0.25

Rated speed rpm : 387
guide sleeve
travel mm : 2.96
Tolerance mm : ± 0.25

Rated speed rpm : 437
guide sleeve
travel mm : 3.71
Tolerance mm : ± 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 4.67
Tolerance mm : ± 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1175

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 191.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 63.0
tolerance degree : ± 4.0

control lever
position degree : 120.0
tolerance degree : ± 4.0

rack travel mm : 13.30
Rated speed rpm : 1135
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1240
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 66.0
tolerance degree : ± 4.0

control lever
position degree : 11.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.70
Tolerance mm : \pm 0.10

Rated speed rpm : 150

CRT mm min. : $>$ 6.70

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 330

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.15
Tolerance mm : \pm 0.15

Rated speed rpm : 500

Pressure hPa : 980
rack travel mm : 3.80
Tolerance mm : \pm 0.15

Pressure hPa : 240
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 113.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.30
Rated speed rpm : 1135
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.15
Tolerance mm : \pm 0.15

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.01.95
Test oil : ISO 4113

Combination No. : 0402646650

Injection pump
Pump designation : PE6P130A72ORS7354
EP type number : 0412636835

Governor
Governor design. : RGV300...950PA1002
: -2K
Governor no. : 0421815434

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8210.42.4000

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750075

Outside diameter : 8.0

E15

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 277.0

<hr/>	
Tolerance	
cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: ± 4.0
<hr/>	
Spreed	
Tolerance	
cm ³ /1000 strokes	: 5.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 300
<hr/>	
Rack travel in mm	: 4.70
Tolerance mm	: ± 0.20
Del. quantity	
cm ³ /1000 strokes	: 22.0
Tolerance	
cm ³ /1000 strokes	: ± 3.0
Check tolerance	
cm ³ /1000S.	: ± 6.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve	
travel mm	: 1.14
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 1006
guide sleeve	
travel mm	: 8.60
Tolerance mm	: ± 0.15
<hr/>	
Rated speed rpm	: 765
guide sleeve	
travel mm	: 6.13
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 520
guide sleeve	
travel mm	: 3.78
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 1340
guide sleeve	
travel mm	: 13.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1195
<hr/>	
Rack travel in mm	: 12.00
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 950
Aneroid pressure	
hPa	: 900
Del. quantity	
cm ³ /1000 strokes	: 277.0
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

RATED SPEED

control lever	
position degree	: 115.0
tolerance degree	: ± 4.0
<hr/>	
rack travel mm	: 12.00
Rated speed rpm	: 995
Tolerance 1/min	: ± 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1110
Tolerance 1/min	: ± 15
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 1300

LOW IDLE

control lever	
position degree	: 67.0
tolerance degree	: ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.20
Tolerance mm : ± 0.10

rack travel mm : > 2.00
Rated speed rpm : 370
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 5.70

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 13.05
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 12.80
Tolerance mm : ± 0.10

Rated speed rpm : 550
rack travel mm : 12.10
Tolerance mm : ± 0.10

Rated speed rpm : 300
rack travel mm : 11.60
Tolerance mm : ± 0.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 950
Pressure hPa : 900
rack travel mm : 13.05
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 950

Pressure hPa : 320
rack travel mm : 9.90
Tolerance mm : ± 0.20

Pressure hPa : 610
rack travel mm : 12.15
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 180

E17

Check
speed 1/min : > 200
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 292.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 178.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 995
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.70
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 01.02.95
Test oil : ISO 4113
Combination No. : 0402646657
Injection pump
Pump designation : PE6P130A320RS7368
EP type number : 0412636836
Governor
Governor design. : RQV250...1125PA1210K
Governor no. : 0421815460
Cust. part No. : 866737
: -P02 new value

Customer-spec. information
Customer : PENTA
Motor : TAMD 122 P
Power KW : 426.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0
Overflow valve : 2417413077
Inlet press. bar : 1.5
Tolerance bar : +- 0.1
Test nozzle holde
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : +- 1.5
Test lines : 1680750015
Outside diameter : 8.0

E19

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : +- 1.0
Prestroke mm : 4.45
Tolerance mm : +- 0.05
test only : +- 0.10
Rack travel in mm : 6.20
Tolerance mm : +- 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.30
Check
tolerance °NW : +- 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1125
Rack travel in mm : 11.50
Tolerance mm : +- 0.05
Del. quantity
cm3/1000 strokes : 318.0

Tolerance cm ³ /1000 strokes	: + 1.5
Check tolerance cm ³ /1000S.	: + 5.0
Spreed Tolerance cm ³ /1000 strokes	: 7.0
Check tolerance cm ³ /1000S.	: 11.0
Del. quantity cm ³ /1000 strokes	: 25.0
Tolerance cm ³ /1000 strokes	: + 3.0
Check tolerance cm ³ /1000S.	: + 6.0
Spreed Tolerance cm ³ /1000 strokes	: 7.0
Check tolerance cm ³ /1000S.	: 11.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve travel mm	: 1.93
Tolerance mm	: + 0.25
Rated speed rpm	: 1157
guide sleeve travel mm	: 11.17
Tolerance mm	: + 0.25
Rated speed rpm	: 823
guide sleeve travel mm	: 7.14
Tolerance mm	: + 0.25
Rated speed rpm	: 325
guide sleeve travel mm	: 2.31
Tolerance mm	: + 0.25
Rated speed rpm	: 375
guide sleeve travel mm	: 2.96
Tolerance mm	: + 0.25
Rated speed rpm	: 490

guide sleeve travel mm	: 3.90
Tolerance mm	: + 0.25
Rated speed rpm	: 1320
guide sleeve travel mm	: 13.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1200
Rack travel in mm	: 10.50
Tolerance mm	: + 1.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1125
Aneroid pressure hPa	: 2000
Del. quantity cm ³ /1000 strokes	: 318.0
Tolerance cm ³ /1000 strokes	: + 1.5
Check tolerance cm ³ /1000S.	: + 5.0
Spreed Tolerance cm ³ /1000 strokes	: 7.0
Check tolerance cm ³ /1000S.	: 11.0

RATED SPEED

control lever position degree	: 70.0
tolerance degree	: + 4.0
control lever position degree	: 122.0
tolerance degree	: + 4.0
rack travel mm	: 10.50
Rated speed rpm	: 1165
Tolerance 1/min	: + 5
rack travel mm	: 4.00
Rated speed rpm	: 1235
Tolerance 1/min	: + 15
rack travel mm	: 0.50
Tolerance mm	: + 0.50

Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

control lever
position degree : 16.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 260
rack travel mm : 4.50
Tolerance mm : \pm 0.20

Rated speed rpm : 200

CRT mm min. : $>$ 5.60

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 330

TORQUE CONTROL

Rated speed rpm : 1125
rack travel mm : 11.50
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 10.60
Tolerance mm : \pm 0.15

Rated speed rpm : 500
rack travel mm : 9.20
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1125
Pressure hPa : 2000
rack travel mm : 11.50
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

E21

rack travel mm : 6.20
Tolerance mm : \pm 0.10

Rated speed rpm : 1125

Pressure hPa : 1500
rack travel mm : 4.90
Tolerance mm : \pm 0.10

Pressure hPa : 290
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 321.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 284.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 163.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 5.0

BREAKAWAY

Rack travel in mm : 10.50
Rated speed rpm : 1165
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.01.95
Test oil : ISO 4113

Combination No. : 0402646760

Injection pump
Pump designation : PE6P120A320LS7834
: -10
EP type number : 0412626853

Governor
Governor design. : RQ300/1050PA1030-23
Governor no. : 0421801769

Cust. part No. : 0260743502

Customer-spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 230.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Tolerance l/h : + 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Lube oil : 1409918004

Test Lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80

Tolerance mm : + 0.05

 Del. quantity
 cm³/1000 strokes : 230.0

 Tolerance
 cm³/1000 strokes : + 1.0

 Check tolerance
 cm³/1000S. : + 4.0

 Spreed
 Tolerance
 cm³/1000 strokes : 5.0

 Check tolerance
 cm³/1000S. : 9.0

 2nd speed rpm : 300

 Rack travel in mm : 6.30
 Tolerance mm : + 0.30
 Del. quantity
 cm³/1000 strokes : 13.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.82
 Tolerance mm : + 0.10

 Rated speed rpm : 1104
 guide sleeve
 travel mm : 6.68
 Tolerance mm : + 0.10

 Rated speed rpm : 1050
 guide sleeve
 travel mm : 6.35
 Tolerance mm : + 0.10

 Rated speed rpm : 832
 guide sleeve
 travel mm : 6.09
 Tolerance mm : + 0.10

Rated speed rpm : 421
 guide sleeve
 travel mm : 4.03
 Tolerance mm : + 0.10

 Rated speed rpm : 550
 guide sleeve
 travel mm : 6.00
 Tolerance mm : + 0.10

 Rated speed rpm : 1270
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

 Rated speed rpm : 893
 guide sleeve
 travel mm : 6.26
 Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600

 Rack travel in mm : 20.00
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 230.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

control lever
 position degree : 100.0
 tolerance degree : + 4.0

 rack travel mm : 13.80
 Rated speed rpm : 1098
 Tolerance 1/min : + 8

 rack travel mm : 4.00

Rated speed rpm : 1195
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 405
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.00

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.80
Tolerance mm : + 0.05

Rated speed rpm : 1050
rack travel mm : 14.80
Tolerance mm : + 0.10

Rated speed rpm : 700
rack travel mm : 14.80
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 14.80
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400

E25

rack travel mm : 10.80
Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 400
rack travel mm : 12.90
Tolerance mm : + 0.20

Pressure hPa : 600
rack travel mm : 14.15
Tolerance mm : + 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 229.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 134.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.80
Rated speed rpm : 1098
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.30
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.01.95
Test oil : ISO 4113

Combination No. : 0402646761

Injection pump
Pump designation : PE6P120A320LS7834
: -10
EP type number : 0412626853

Governor
Governor design. : RQ300/1050PA1031-19
Governor no. : 0421801768

Cust. part No. : 0260743802

Customer-spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 230.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

E27

Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80

Tolerance mm	: ± 0.05
<hr/>	
Del. quantity cm ³ /1000 strokes	: 230.0
<hr/>	
Tolerance cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance cm ³ /1000S.	: ± 4.0
<hr/>	
Spreed Tolerance cm ³ /1000 strokes	: 5.0
<hr/>	
Check tolerance cm ³ /1000S.	: 9.0
2nd speed rpm	: 300
Rack travel in mm	: 6.30
Tolerance mm	: ± 0.30
Del. quantity cm ³ /1000 strokes	: 13.0
Tolerance cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spreed Tolerance cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm guide sleeve travel mm	: 300
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm guide sleeve travel mm	: 1104
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm guide sleeve travel mm	: 1050
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm guide sleeve travel mm	: 832
Tolerance mm	: ± 0.10

Rated speed rpm guide sleeve travel mm	: 421
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm guide sleeve travel mm	: 550
Tolerance mm	: ± 0.10
<hr/>	
Rated speed rpm guide sleeve travel mm	: 1270
Tolerance mm	: ± 0.50
<hr/>	
Rated speed rpm guide sleeve travel mm	: 893
Tolerance mm	: ± 0.10

GUIDE SLEEVE POSITION

Rated speed rpm	: 600
Rack travel in mm	: 20.00
Tolerance mm	: ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 550
Aneroid pressure hPa	: 1000
Del. quantity cm ³ /1000 strokes	: 230.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

RATED SPEED

control lever position degree	: 99.0
tolerance degree	: ± 4.0
<hr/>	
rack travel mm	: 13.80
Rated speed rpm	: 1098
Tolerance 1/min	: ± 8
<hr/>	
rack travel mm	: 4.00

Rated speed rpm : 1195
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 69.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.50
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 350
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 5.30

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.80
Tolerance mm : + 0.05

Rated speed rpm : 1050
rack travel mm : 14.80
Tolerance mm : + 0.10

Rated speed rpm : 700
rack travel mm : 14.80
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 14.80
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400

F01

rack travel mm : 10.80
Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 400
rack travel mm : 12.90
Tolerance mm : + 0.20

Pressure hPa : 600
rack travel mm : 14.15
Tolerance mm : + 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 229.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 134.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.80
Rated speed rpm : 1098
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.30
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.01.95
Test oil : ISO 4113

Combination No. : 0402646762

Injection pump
Pump designation : PE6P120A320LS7834
: -10
EP type number : 0412626853

Governor
Governor design. : RQV300...1050PA1033
: -18
Governor no. : 0421814136

Cust. part No. : 0260743602

Customer-spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 230.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Tolerance l/h : + 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Lube oil : 1409918004

F03

Test Lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 230.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.30
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.29
Tolerance mm : + 0.20

Rated speed rpm : 1108
guide sleeve
travel mm : 8.53
Tolerance mm : + 0.15

Rated speed rpm : 558
guide sleeve
travel mm : 4.53
Tolerance mm : + 0.25

Rated speed rpm : 608

guide sleeve
travel mm : 5.03
Tolerance mm : + 0.25

Rated speed rpm : 820
guide sleeve
travel mm : 6.13
Tolerance mm : + 0.25

Rated speed rpm : 1183
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 1280
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1145

Rack travel in mm : 13.80
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 121.0
tolerance degree : + 4.0

rack travel mm : 13.80
Rated speed rpm : 1095
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 66.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : + 0.10

Rated speed rpm : 200
CRT mm min. : > 7.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.80
Tolerance mm : + 0.05

Rated speed rpm : 1050
rack travel mm : 14.80
Tolerance mm : + 0.10

Rated speed rpm : 700
rack travel mm : 14.80
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 14.80
Tolerance mm : + 0.05

MEASUREMENT

F05

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 10.80
Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 400
rack travel mm : 12.90
Tolerance mm : + 0.20

Pressure hPa : 600
rack travel mm : 14.15
Tolerance mm : + 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 229.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 134.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.80
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000s. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.30
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.01.95
Test oil : ISO 4113
Combination No. : 0402646763
Injection pump
Pump designation : PE6P120A320LS7834
: -10
EP type number : 0412626853
Governor
Governor design. : RQV300...1050PA1065
: -2
Governor no. : 0421814135
Cust. part No. : 0260743702

Customer-spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 230.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413047
Inlet press. bar : 1.5
Tolerance bar : + 0.1
Tolerance l/h : + 10.0
Test nozzle holde
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Lube oil : 1409918004

F07

Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 5.55
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 20.50
Tolerance mm : + 0.50
Firing order : 6- 3- 5- 2- 4-
: 1
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 230.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.30
 Tolerance mm : + 0.30
 Del. quantity
 cm³/1000 strokes : 13.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.13
 Tolerance mm : + 0.25

Rated speed rpm : 1108
 guide sleeve
 travel mm : 9.82
 Tolerance mm : + 0.25

Rated speed rpm : 370
 guide sleeve
 travel mm : 2.00
 Tolerance mm : + 0.25

Rated speed rpm : 420

F08

guide sleeve
 travel mm : 2.49
 Tolerance mm : + 0.25

Rated speed rpm : 750
 guide sleeve
 travel mm : 4.87
 Tolerance mm : + 0.25

Rated speed rpm : 1310
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1200

Rack travel in mm : 13.80
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 230.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

control lever
 position degree : 104.0
 tolerance degree : + 4.0

rack travel mm : 13.80
 Rated speed rpm : 1095
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1195
 Tolerance 1/min : + 15

rack travel mm : 0.75

Tolerance mm : \pm 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 8.10

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.80
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 14.80
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 14.80
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 14.80
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 10.80
Tolerance mm : \pm 0.15

Rated speed rpm : 400

Pressure hPa : 400
rack travel mm : 12.90
Tolerance mm : \pm 0.20

Pressure hPa : 600
rack travel mm : 14.15
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80

Rated speed rpm : $<$ 220

Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000

Rated speed rpm : 1050

Del. quantity
cm³/1000 strokes : 229.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 134.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.80

Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.30
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.01.95
Test oil : ISO 4113

Combination No. : 0402646768

Injection pump
Pump designation : PE6P120A320LS7837
 : -10
EP type number : 0412626855

Governor
Governor design. : RQ300/950PA971-12
Governor no. : 0421801765

Cust. part No. : 0260741302

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power KW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test Lines : 1680750075

F11

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
 : 1-

Phasing : 0-60-120-180-240
 : -300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.10
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.20
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.72
Tolerance mm : ± 0.10

Rated speed rpm : 1005
guide sleeve
travel mm : 6.34
Tolerance mm : ± 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 429
guide sleeve
travel mm : 4.46
Tolerance mm : ± 0.10

Rated speed rpm : 580

guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1190
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1100

Del. quantity
cm³/1000 strokes : 252.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 100.0
tolerance degree : ± 4.0

rack travel mm : 14.10
Rated speed rpm : 998
Tolerance 1/min : ± 8

rack travel mm : 4.00
Rated speed rpm : 1108
Tolerance 1/min : ± 15

rack travel mm : 0.75
Tolerance mm : ± 0.75
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 75.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 435
Tolerance 1/min : ± 30

Rated speed rpm : 200
CRT mm min. : > 8.60

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.10
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 15.10
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1100
rack travel mm : 15.10
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.15
Tolerance mm : ± 0.20

Rated speed rpm : 400

Pressure hPa : 150
rack travel mm : 10.05
Tolerance mm : ± 0.20

Pressure hPa : 550
rack travel mm : 13.85
Tolerance mm : ± 0.20

START CUT-OUT

Rated speed rpm : > 190
Check
speed 1/min : > 170
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

BREAKAWAY

Rack travel in mm : 14.10
Rated speed rpm : 998
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000s. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.01.95
Test oil : ISO 4113

Combination No. : 0402646772A

Injection pump
Pump designation : PE6F120A320LS7846
EP type number : 0412626865

Governor
Governor design. : RQ300/1050PA1030-21
Governor no. : 0421801758

Cust. part No. : 0250747102

Customer-spec. information

Customer : MB-NFZ
Motor : OM441 LA
Power KW : 230.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Tolerance l/h : + 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Lube oil : 1409918004

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 230.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.30
 Tolerance mm : + 0.30
 Del. quantity
 cm³/1000 strokes : 13.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600
 Rack travel in mm : 20.00
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
 Aneroid pressure
 hPa : 1000

F16

Del. quantity
 cm³/1000 strokes : 230.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

control lever
 position degree : 99.0
 tolerance degree : + 4.0

rack travel mm : 13.80
 Rated speed rpm : 1098
 Tolerance 1/min : + 8

rack travel mm : 4.00
 Rated speed rpm : 1200
 Tolerance 1/min : + 15

rack travel mm : 0.75
 Tolerance mm : + 0.75
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 72.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 5.20
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 405
 Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 6.80

TORQUE CONTROL

Rated speed rpm : 550
 rack travel mm : 14.80
 Tolerance mm : + 0.05

Rated speed rpm : 1050
rack travel mm : 14.80
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 14.80
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 11.30
Tolerance mm : ± 0.15

Rated speed rpm : 400

Pressure hPa : 400
rack travel mm : 13.35
Tolerance mm : ± 0.20

Pressure hPa : 540
rack travel mm : 14.20
Tolerance mm : ± 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 228.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 138.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.80
Rated speed rpm : 1098
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.30
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.01.95
Test oil : ISO 4113

Combination No. : 0402646773A

Injection pump
Pump designation : PE6P120A320LS7846
EP type number : 0412626865

Governor
Governor design. : RQV300...1050PA1033
 : -15
Governor no. : 0421814120

Cust. part No. : 0250747202

Customer spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power Kw : 230.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
 : 1-

Phasing : 0-60-120-180-240
 : -300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80

Tolerance mm : \pm 0.05

 Del. quantity
 cm³/1000 strokes : 230.0

 Tolerance
 cm³/1000 strokes : \pm 1.0

 Check tolerance
 cm³/1000S. : \pm 4.0

 Spreed
 Tolerance
 cm³/1000 strokes : 5.0

 Check tolerance
 cm³/1000S. : 9.0

 2nd speed rpm : 300

 Rack travel in mm : 6.30
 Tolerance mm : \pm 0.30
 Del. quantity
 cm³/1000 strokes : 13.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1135

 Rack travel in mm : 13.80
 Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 230.0
 Tolerance
 cm³/1000 strokes : \pm 1.0

F19

Check tolerance
 cm³/1000S. : \pm 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

control lever
 position degree : 121.0
 tolerance degree : \pm 4.0

 rack travel mm : 13.80
 Rated speed rpm : 1095
 Tolerance 1/min : \pm 5

 rack travel mm : 4.00
 Rated speed rpm : 1175
 Tolerance 1/min : \pm 15

 rack travel mm : 0.75
 Tolerance mm : \pm 0.75
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 66.0
 tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 5.20
 Tolerance mm : \pm 0.10

 Rated speed rpm : 200
 CRT mm min. : $>$ 7.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 550
 rack travel mm : 14.80
 Tolerance mm : \pm 0.05

 Rated speed rpm : 1050
 rack travel mm : 14.80

Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 14.80
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 11.30
Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 400
rack travel mm : 13.35
Tolerance mm : + 0.20

Pressure hPa : 540
rack travel mm : 14.20
Tolerance mm : + 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 228.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 138.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.80
Rated speed rpm : 1095
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.30
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.01.95
Test oil : ISO 4113
Combination No. : 0402646785A
Injection pump
Pump designation : PE6P120A320LS7869
EP type number : 0412626887
Governor
Governor design. : RQV300...1050PA1078K
Governor no. : 0421815359
Cust. part No. : 9275445

Customer-spec. information
Customer : LIEBHERR
Motor : D 9406 TI
Power kW : 300.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413047
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Overflow quantity
min. l/h : 165
Tolerance l/h : ± 20.0
Test nozzle holder
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Lube oil : 1409918004

F21

Test Lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 3.65
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 6- 3- 5- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050
Rack travel in mm : 12.20
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 283.0
Tolerance
cm³/1000 strokes : ± 1.0

<hr/>	
Check tolerance	
cm ³ /1000S.	: + 4.0
<hr/>	
Spread	
Tolerance	
cm ³ /1000 strokes	: 5.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 300
<hr/>	
Rack travel in mm	: 6.00
Tolerance mm	: + 0.10
Del. quantity	
cm ³ /1000 strokes	: 35.0
Tolerance	
cm ³ /1000 strokes	: + 3.0
Check tolerance	
cm ³ /1000S.	: + 6.0
Spread	
Tolerance	
cm ³ /1000 strokes	: 6.0
Check tolerance	
cm ³ /1000S.	: 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve	
travel mm	: 1.69
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1117
guide sleeve	
travel mm	: 10.38
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 746
guide sleeve	
travel mm	: 6.20
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 353
guide sleeve	
travel mm	: 2.45
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 403
guide sleeve	
travel mm	: 3.18
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 450

guide sleeve	
travel mm	: 3.66
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1320
guide sleeve	
travel mm	: 13.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1185
<hr/>	
Rack travel in mm	: 10.80
Tolerance mm	: + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1050
Aneroid pressure	
hPa	: -
Del. quantity	
cm ³ /1000 strokes	: 283.0
Tolerance	
cm ³ /1000 strokes	: + 1.0
Check tolerance	
cm ³ /1000S.	: + 4.0
Spread	
Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

RATED SPEED

control lever	
position degree	: 121.0
tolerance degree	: + 4.0
<hr/>	
rack travel mm	: 11.20
Rated speed rpm	: 1105
Tolerance 1/min	: + 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1185
Tolerance 1/min	: + 15
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1300

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 8.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.20
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 11.80
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 10.00
Tolerance mm : ± 0.10

Rated speed rpm : 950
rack travel mm : 12.10
Tolerance mm : ± 0.10

Rated speed rpm : 600
rack travel mm : 10.20
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1050
Pressure hPa : 1550
rack travel mm : 12.20
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : 850
Rated speed rpm : 1050

rack travel mm : 11.20
Tolerance mm : ± 0.05

Rated speed rpm : 1050

Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : ± 0.10

Pressure hPa : 575
rack travel mm : 9.50
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100

Check
speed 1/min : > 80

Rated speed rpm : < 220

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 297.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 273.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 242.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 11.20
Rated speed rpm : 1105
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.60
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.01.95
Test oil : ISO 4113

Combination No. : 0402646972

Injection pump
Pump designation : PE6P120A320RS7218
: -10
EP type number : 0412626891

Governor
Governor design. : RQV275...1000PA939
: -2
Governor no. : 0421813986

Cust. part No. : 1249381/4

Customer spec. information
Customer : DAF
Motor : WS 268 L
Power KW : 268.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : + 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

F25

Test Lines : 1680750089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.35
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 14.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 14.95
Tolerance mm : + 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes :	235.0
<hr/>	
Tolerance	
cm ³ /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: + 4.0
<hr/>	
Spread	
Tolerance	
cm ³ /1000 strokes :	5.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 9.0
<hr/>	
2nd speed rpm	: 275
<hr/>	
Rack travel in mm :	6.00
Tolerance mm :	+ 0.10
Del. quantity	
cm ³ /1000 strokes :	17.0
Tolerance	
cm ³ /1000 strokes :	+ 3.0
Check tolerance	
cm ³ /1000S.	: + 6.0
Spread	
Tolerance	
cm ³ /1000 strokes :	8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 275
guide sleeve	
travel mm	: 1.34
Tolerance mm	: + 0.15
<hr/>	
Rated speed rpm	: 1058
guide sleeve	
travel mm	: 8.05
Tolerance mm	: + 0.20
<hr/>	
Rated speed rpm	: 676
guide sleeve	
travel mm	: 4.49
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 301
guide sleeve	
travel mm	: 1.78
Tolerance mm	: + 0.25

Rated speed rpm	: 351
guide sleeve	
travel mm	: 2.45
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 380
guide sleeve	
travel mm	: 2.66
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1310
guide sleeve	
travel mm	: 11.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1125
<hr/>	
Rack travel in mm	: 14.90
Tolerance mm	: + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 850
Aneroid pressure	
hPa	: 1000
Del. quantity	
cm ³ /1000 strokes	: 235.0
Tolerance	
cm ³ /1000 strokes	: + 1.0
Check tolerance	
cm ³ /1000S.	: + 4.0
Spread	
Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

RATED SPEED

control lever	
position degree	: 120.0
tolerance degree	: + 4.0
<hr/>	
rack travel mm	: 13.80
Rated speed rpm	: 1045
Tolerance 1/min	: + 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1165
Tolerance 1/min	: + 15

rack travel mm : 0.70
Tolerance mm : ± 0.70
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 82.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.00
Tolerance mm : ± 0.10

Rated speed rpm : 175

CRT mm min. : > 7.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 14.95
Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 14.95
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 14.95
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 12.10
Tolerance mm : ± 0.10

Rated speed rpm : 600

Pressure hPa : 490

F27

rack travel mm : 14.25
Tolerance mm : ± 0.05

Pressure hPa : 280
rack travel mm : 12.90
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 13.80
Rated speed rpm : 1045
Tolerance 1/min : ± 5

LOW IDLE

Rated speed rpm : 275
rack travel mm : 6.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.01.95
Test oil : ISO 4113

Combination No. : 0402646974

Injection pump
Pump designation : PE6P120A320RS7218
: -10

EP type number : 0412626891

Governor
Governor design. : RQ275/1000PA936-2
Governor no. : 0421801633

Cust. part No. : 124959714

Customer spec. information

Customer : DAF
Motor : WS 268 L
Power KW : 268.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 105
Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.35
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 14.95
 Tolerance mm : ± 0.05

Del. quantity
 cm³/1000 strokes : 235.0

Tolerance
 cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : ± 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 6.00
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 17.0
 Tolerance
 cm³/1000 strokes : ± 3.0
 Check tolerance
 cm³/1000S. : ± 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
 guide sleeve
 travel mm : 1.62
 Tolerance mm : ± 0.10

Rated speed rpm : 1047
 guide sleeve
 travel mm : 6.41
 Tolerance mm : ± 0.10

Rated speed rpm : 1000
 guide sleeve
 travel mm : 6.00
 Tolerance mm : ± 0.10

Rated speed rpm : 356

guide sleeve
 travel mm : 4.11
 Tolerance mm : ± 0.10

Rated speed rpm : 450
 guide sleeve
 travel mm : 6.00
 Tolerance mm : ± 0.10

Rated speed rpm : 1220
 guide sleeve
 travel mm : 11.50
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 550

Rack travel in mm : 16.20
 Tolerance mm : ± 0.60

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 235.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

control lever
 position degree : 112.0
 tolerance degree : ± 4.0

rack travel mm : 13.95
 Rated speed rpm : 1042
 Tolerance 1/min : ± 8

rack travel mm : 4.00
 Rated speed rpm : 1155
 Tolerance 1/min : ± 15

rack travel mm : 0.70

Tolerance mm : ± 0.70
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 350
Tolerance 1/min : ± 20

Rated speed rpm : 175

CRT mm min. : > 6.50

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 14.95
Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 14.95
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 14.95
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 12.10
Tolerance mm : ± 0.10

Rated speed rpm : 600

Pressure hPa : 490
rack travel mm : 14.25
Tolerance mm : ± 0.05

G02

Pressure hPa : 280
rack travel mm : 12.90
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 13.95
Rated speed rpm : 1042
Tolerance 1/min : ± 8

LOW IDLE

Rated speed rpm : 275
rack travel mm : 6.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.12.94
Test oil : ISO 4113

Combination No. : 0402646989

Injection pump
Pump designation : PE6P120A320RS7230
 : -10Y
EP type number : 0412626898

Governor
Governor design. : RQV250...1000PA990K
Governor no. : 0421815274

Cust. part No. : i250708/2

Customer-spec. information
Customer : DAF
Motor : WS 315 L
Power KW : 315.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750089

G03

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 14.50
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 14.55
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 274.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 250

Rack travel in mm : 5.90
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 1.53
Tolerance mm : + 0.20

Rated speed rpm : 1038
guide sleeve
travel mm : 9.73
Tolerance mm : + 0.15

Rated speed rpm : 686
guide sleeve
travel mm : 6.41
Tolerance mm : + 0.25

Rated speed rpm : 284
guide sleeve
travel mm : 2.27
Tolerance mm : + 0.25

Rated speed rpm : 334

guide sleeve
travel mm : 3.08
Tolerance mm : + 0.25

Rated speed rpm : 400
guide sleeve
travel mm : 3.92
Tolerance mm : + 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1130

Rack travel in mm : 13.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 274.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : + 4.0

rack travel mm : 13.55
Rated speed rpm : 1032
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1150
Tolerance 1/min : + 15

rack travel mm : 0.70

Tolerance mm : ± 0.70
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.20
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 340
Tolerance 1/min : ± 20

Rated speed rpm : 150
CRT mm min. : > 7.00

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 14.55
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 13.30
Tolerance mm : ± 0.05

Rated speed rpm : 400
rack travel mm : 13.10
Tolerance mm : ± 0.10

Rated speed rpm : 800
rack travel mm : 14.20
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 14.55
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 980

G05

rack travel mm : 9.10
Tolerance mm : ± 0.10

Rated speed rpm : 980

Pressure hPa : 760
rack travel mm : 13.15
Tolerance mm : ± 0.05

Pressure hPa : 350
rack travel mm : 10.30
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 286.0
Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 5.0
Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 172.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 13.55
Rated speed rpm : 1032
Tolerance 1/min : ± 8

LOW IDLE

Rated speed rpm : 250
rack travel mm : 5.90
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.01.95
Test oil : ISO 4113

Combination No. : 0402646996A

Injection pump
Pump designation : PE6P120A320LS7852
EP type number : 0412626871

Governor
Governor design. : RQ300/1050PA1031-4
Governor no. : 0421801656

Cust. part No. : 0230744702

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power KW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Tolerance l/h : + 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Lube oil : 1409918004

G07

Test Lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.10

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.20
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600
Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1100
Del. quantity
cm³/1000 strokes : 252.0

G08

Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 100.0
tolerance degree : \pm 4.0

rack travel mm : 14.10
Rated speed rpm : 1098
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 8.10

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.10
Tolerance mm : \pm 0.05

Rated speed rpm : 1050

rack travel mm : 15.10
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1100
rack travel mm : 15.10
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.15
Tolerance mm : ± 0.20

Rated speed rpm : 400

Pressure hPa : 150
rack travel mm : 10.05
Tolerance mm : ± 0.20

Pressure hPa : 550
rack travel mm : 13.85
Tolerance mm : ± 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.10
Rated speed rpm : 1098
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.01.95
Test oil : ISO 4113

Combination No. : 0402646997A

Injection pump
Pump designation : PE6P120A320LS7852
EP type number : 0412626871

Governor
Governor design. : RGV300...950PA1033
: -5
Governor no. : 0421814008

Cust. part No. : 0230744302

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power KW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

G10

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.10
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.20
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1040

Rack travel in mm : 14.10
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1100

Del. quantity
cm³/1000 strokes : 252.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 122.0
tolerance degree : ± 4.0

rack travel mm : 14.10
Rated speed rpm : 995
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1100
Tolerance 1/min : ± 15

rack travel mm : 0.70
Tolerance mm : ± 0.70
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 85.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : ± 0.10

Rated speed rpm : 200
CRT mm min. : > 8.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.10

Tolerance mm : \pm 0.05
Rated speed rpm : 950
rack travel mm : 15.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1100
rack travel mm : 15.10
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.15
Tolerance mm : \pm 0.20

Rated speed rpm : 400

Pressure hPa : 150
rack travel mm : 10.05
Tolerance mm : \pm 0.20

Pressure hPa : 550
rack travel mm : 13.85
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 220
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.10
Rated speed rpm : 995
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.01.95
Test oil : ISO 4113

Combination No. : 0402646998A

Injection pump
Pump designation : PE6P120A320LS7852
EP type number : 0412626871

Governor
Governor design. : RQV300...1050PA1033
: -6
Governor no. : 0421814009

Cust. part No. : 0230744602

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power KW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 110
Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.10
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 252.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.20
 Tolerance mm : + 0.30
 Del. quantity
 cm³/1000 strokes : 19.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1140

Rack travel in mm : 14.10
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
 Aneroid pressure
 hPa : 1100
 Del. quantity
 cm³/1000 strokes : 252.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

control lever
 position degree : 122.0
 tolerance degree : + 4.0

rack travel mm : 14.10
 Rated speed rpm : 1095
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1190
 Tolerance 1/min : + 15

rack travel mm : 0.75
 Tolerance mm : + 0.75
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 85.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 5.50
 Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 8.60

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.10
Tolerance mm : ± 0.05

Rated speed rpm : 1050
rack travel mm : 15.10
Tolerance mm : ± 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST**

SETTING

Rated speed rpm : 400
Pressure hPa : 1100
rack travel mm : 15.10
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.15
Tolerance mm : ± 0.20

Rated speed rpm : 400

Pressure hPa : 150
rack travel mm : 10.05
Tolerance mm : ± 0.20

Pressure hPa : 550
rack travel mm : 13.85
Tolerance mm : ± 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

G15

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity,
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.10
Rated speed rpm : 1095
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.20
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.08.94
Test oil : ISO 4113

Combination No. : 0402648931

Injection pump
Pump designation : PE8P120A320LS7847-2
EP type number : 0412628885

Governor
Governor design. : RQ300/950PA1032-10
Governor no. : 0421801735

Cust. part No. : 0230741302

Customer-spec. information
Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

G17

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8-7-2-6-3
 : -5-4-1

Phasing : 0-45-90-135-180
 : -225-270-315

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 239.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.74
Tolerance mm : + 0.10

Rated speed rpm : 1005
guide sleeve
travel mm : 6.84
Tolerance mm : + 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.50
Tolerance mm : + 0.10

Rated speed rpm : 736

guide sleeve
travel mm : 6.13
Tolerance mm : + 0.10

Rated speed rpm : 415
guide sleeve
travel mm : 3.82
Tolerance mm : + 0.10

Rated speed rpm : 550
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1160
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

Rated speed rpm : 833
guide sleeve
travel mm : 6.38
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 239.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 97.0
tolerance degree : + 4.0

rack travel mm : 13.00
Rated speed rpm : 998

Tolerance 1/min : + 8
 rack travel mm : 4.00
 Rated speed rpm : 1085
 Tolerance 1/min : + 15
 rack travel mm : 0.75
 Tolerance mm : + 0.75
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 73.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 5.50
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 420
 Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.50

TORQUE CONTROL

Rated speed rpm : 550
 rack travel mm : 14.80
 Tolerance mm : + 0.05

Rated speed rpm : 950
 rack travel mm : 14.00
 Tolerance mm : + 0.10

Rated speed rpm : 900
 rack travel mm : 14.10
 Tolerance mm : + 0.10

Rated speed rpm : 875
 rack travel mm : 14.25
 Tolerance mm : + 0.10

Rated speed rpm : 800
 rack travel mm : 14.75
 Tolerance mm : + 0.10

Rated speed rpm : 400
 rack travel mm : 12.90
 Tolerance mm : + 0.10

ANEROID/ALTITUDE
 COMPENSATOR TEST

SETTING

Rated speed rpm : 400
 Pressure hPa : 1200
 rack travel mm : 14.80
 Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 400
 rack travel mm : 10.60
 Tolerance mm : + 0.20

Rated speed rpm : 400

Pressure hPa : 450
 rack travel mm : 12.90
 Tolerance mm : + 0.10

Pressure hPa : 300
 rack travel mm : 11.90
 Tolerance mm : + 0.15

START CUT-OUT

Rated speed rpm : > 100
 Check
 speed 1/min : > 80
 Rated speed rpm : > 220
 Check
 speed 1/min : > 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1200
 Rated speed rpm : 950
 Del. quantity
 cm³/1000 strokes : 214.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 5.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

Aneroid pressure
 hPa : 450

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 998
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.70
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.10.94
Test oil : ISO 4113
Combination No. : 0402648981
Injection pump
Pump designation : PE8P120A320LS7839
 : -10
EP type number : 0412628855
Governor
Governor design. : RQ300/950PA971-10
Governor no. : 0421801754
Cust. part No. : 0250749002

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413047
Inlet press. bar : 1.5
Tolerance bar : + 0.1
Tolerance l/h : + 10.0
Test nozzle holde
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Lube oil : 1409918004

G21

Test Lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 5.05
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 14.50
Tolerance mm : + 0.50
Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1
Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550
Rack travel in mm : 15.20

Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 289.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.25
Tolerance mm : + 0.10

Rated speed rpm : 1005
guide sleeve
travel mm : 6.33
Tolerance mm : + 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 4.72
Tolerance mm : + 0.10

Rated speed rpm : 580
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1190
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 289.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 102.0
tolerance degree : + 4.0

rack travel mm : 14.20
Rated speed rpm : 998
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1105
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 76.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 425
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 7.20

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.20
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 15.20
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 15.20
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 15.20
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 8.15
Tolerance mm : ± 0.15

Rated speed rpm : 400

Pressure hPa : 300
rack travel mm : 10.00
Tolerance mm : ± 0.20

Pressure hPa : 500

rack travel mm : 11.75
Tolerance mm : ± 0.20

START CUT-OUT

Rated speed rpm : > 100

Check
speed 1/min : > 80

Rated speed rpm : < 220

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200

Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 274.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure

hPa : 1200

Rated speed rpm : 950

Del. quantity
cm³/1000 strokes : 271.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 133.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.20

Rated speed rpm : 998

Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 255.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.01.95
Test oil : ISO 4113

Combination No. : 0402648985

Injection pump
Pump designation : PE8P120A320LS7839
: -10
EP type number : 0412628855

Governor
Governor design. : RQ300/1050PA993-10
Governor no. : 0421801760

Cust. part No. : 0250749502

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20

Tolerance mm : \pm 0.05

 Del. quantity
 cm³/1000 strokes : 289.0

 Tolerance
 cm³/1000 strokes : \pm 1.0

 Check tolerance
 cm³/1000S. : \pm 4.0

 Spreed
 Tolerance
 cm³/1000 strokes : 6.0

 Check tolerance
 cm³/1000S. : 9.0

 2nd speed rpm : 300

 Rack travel in mm : 5.20
 Tolerance mm : \pm 0.30
 Del. quantity
 cm³/1000 strokes : 19.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.85
 Tolerance mm : \pm 0.10

 Rated speed rpm : 1104
 guide sleeve
 travel mm : 6.34
 Tolerance mm : \pm 0.10

 Rated speed rpm : 1050
 guide sleeve
 travel mm : 6.00
 Tolerance mm : \pm 0.10

 Rated speed rpm : 271
 guide sleeve
 travel mm : 1.33
 Tolerance mm : \pm 0.10

Rated speed rpm : 510
 guide sleeve
 travel mm : 6.00
 Tolerance mm : \pm 0.10

 Rated speed rpm : 1280
 guide sleeve
 travel mm : 11.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

 Rack travel in mm : 20.00
 Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 289.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

control lever
 position degree : 98.0
 tolerance degree : \pm 4.0

 rack travel mm : 14.20
 Rated speed rpm : 1098
 Tolerance 1/min : \pm 5

 rack travel mm : 4.00
 Rated speed rpm : 1195
 Tolerance 1/min : \pm 15

 rack travel mm : 0.75
 Tolerance mm : \pm 0.75
 Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 69.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.50
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 350
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 5.50

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.20
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 15.20
Tolerance mm : + 0.10

Rated speed rpm : 1050
rack travel mm : 15.20
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 15.20
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 8.20
Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 300
rack travel mm : 9.90
Tolerance mm : + 0.20

Pressure hPa : 500

rack travel mm : 11.75
Tolerance mm : + 0.20

START CUT-OUT

Rated speed rpm : > 100

Check
speed 1/min : > 80

Rated speed rpm : < 220

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200

Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 274.5

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure

hPa : 1200

Rated speed rpm : 1050

Del. quantity
cm³/1000 strokes : 269.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 133.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.20

Rated speed rpm : 1098

Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.01.95
Test oil : ISO 4113
Combination No. : 0402648987
Injection pump
Pump designation : PE8P120A320LS7838
: -10
EP type number : 0412628854
Governor
Governor design. : RGV300...950PA1199
: -2
Governor no. : 0421814144
Cust. part No. : 0250746202

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 320.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413047
Inlet press. bar : 1.5
Tolerance bar : + 0.1
Tolerance l/h : + 10.0
Test nozzle holde
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Lube oil : 1409918004

H01

Test Lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50
Tolerance mm : + 0.50

Firing order : 8-7-2-6-3
: -5-4-1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm	:	15.00
Tolerance mm	:	+ 0.05
<hr/>		
Del. quantity		
cm ³ /1000 strokes	:	254.0
<hr/>		
Tolerance		
cm ³ /1000 strokes	:	+ 1.0
<hr/>		
Check tolerance		
cm ³ /1000S.	:	+ 4.0
<hr/>		
Spreed		
Tolerance		
cm ³ /1000 strokes	:	6.0
<hr/>		
Check tolerance		
cm ³ /1000S.	:	9.0
<hr/>		
2nd speed rpm	:	300
<hr/>		
Rack travel in mm	:	6.10
Tolerance mm	:	+ 0.30
Del. quantity		
cm ³ /1000 strokes	:	19.0
Tolerance		
cm ³ /1000 strokes	:	+ 3.0
Check tolerance		
cm ³ /1000S.	:	+ 6.0
Spreed		
Tolerance		
cm ³ /1000 strokes	:	6.0
Check tolerance		
cm ³ /1000S.	:	10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	:	300
guide sleeve		
travel mm	:	1.29
Tolerance mm	:	+ 0.20
<hr/>		
Rated speed rpm	:	1012
guide sleeve		
travel mm	:	8.60
Tolerance mm	:	+ 0.15
<hr/>		
Rated speed rpm	:	567
guide sleeve		
travel mm	:	4.66
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	617

guide sleeve		
travel mm	:	5.23
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	780
guide sleeve		
travel mm	:	6.31
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	1092
guide sleeve		
travel mm	:	10.00
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	1190
guide sleeve		
travel mm	:	11.50
Tolerance mm	:	+ 0.50

GUIDE SLEEVE POSITION

control lever		
position degree	:	- 1
Rated speed rpm	:	1045
<hr/>		
Rack travel in mm	:	14.00
Tolerance mm	:	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	550
Aneroid pressure		
hPa	:	1000
Del. quantity		
cm ³ /1000 strokes	:	254.0
Tolerance		
cm ³ /1000 strokes	:	+ 1.0
Check tolerance		
cm ³ /1000S.	:	+ 4.0
Spreed		
Tolerance		
cm ³ /1000 strokes	:	6.0
Check tolerance		
cm ³ /1000S.	:	9.0

RATED SPEED

control lever		
position degree	:	122.0
tolerance degree	:	+ 4.0
<hr/>		
rack travel mm	:	14.00
Rated speed rpm	:	995
Tolerance 1/min	:	+ 5

rack travel mm : 4.00
Rated speed rpm : 1105
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 82.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.50
Tolerance mm : + 0.10

Rated speed rpm : 200
CRT mm min. : > 7.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.00
Tolerance mm : + 0.05

Rated speed rpm : 950
rack travel mm : 15.00
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 15.00
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 400
Pressure hPa : -
rack travel mm : 9.10

H03

Tolerance mm : + 0.15

Pressure hPa : 550
rack travel mm : 13.70
Tolerance mm : + 0.15

START CUT-OUT

Rated speed rpm : > 190
Check
speed 1/min : > 170
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 242.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.00
Rated speed rpm : 995
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.10
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.01.95
Test oil : ISO 4113

Combination No. : 0402648993

Injection pump
Pump designation : PE8P120A320LS7838
: -10
EP type number : 0412628854

Governor
Governor design. : RQ300/950PA971-11
Governor no. : 0421801764

Cust. part No. : 0260740202

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power kW : 320.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

H05

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure : 31.0
Tolerance : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 254.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.10
 Tolerance mm : + 0.30
 Del. quantity
 cm³/1000 strokes : 19.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.72
 Tolerance mm : + 0.10

Rated speed rpm : 1005
 guide sleeve
 travel mm : 6.34
 Tolerance mm : + 0.10

Rated speed rpm : 950
 guide sleeve
 travel mm : 6.00
 Tolerance mm : + 0.10

Rated speed rpm : 451

guide sleeve
 travel mm : 4.76
 Tolerance mm : + 0.10

Rated speed rpm : 580
 guide sleeve
 travel mm : 6.00
 Tolerance mm : + 0.10

Rated speed rpm : 1190
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
 Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 254.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

control lever
 position degree : 98.0
 tolerance degree : + 4.0

rack travel mm : 14.00
 Rated speed rpm : 998
 Tolerance 1/min : + 8

rack travel mm : 4.00
 Rated speed rpm : 1100
 Tolerance 1/min : + 15

rack travel mm : 0.75
 Tolerance mm : + 0.75
 Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.10
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 430
Tolerance 1/min : ± 30

Rated speed rpm : 200

CRT mm min. : > 9.00

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.00
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 15.00
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 15.00
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.10
Tolerance mm : ± 0.15

Rated speed rpm : 400

Pressure hPa : 250
rack travel mm : 10.80
Tolerance mm : ± 0.15

Pressure hPa : 550

H07

rack travel mm : 13.70
Tolerance mm : ± 0.15

START CUT-OUT

Rated speed rpm : > 190

Check
speed 1/min : > 170

Rated speed rpm : > 220

Check
speed 1/min : > 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000

Rated speed rpm : 950

Del. quantity
cm³/1000 strokes : 242.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 135.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.00

Rated speed rpm : 998

Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.10
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.01.95
Test oil : ISO 4113

Combination No. : 0402666800

Injection pump
Pump designation : PE6P120A320/3LS7854
: -2

EP type number : 0412626935

Governor
Governor design. : RSV600...1050POA826
: -7

Governor no. : 0421833453

Cust. part No. : 0240747002

Customer-spec. information
Customer : MB-NFZ
Motor : OM 441 LA
Power KW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 110
Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

H09

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 13.45
 Tolerance mm : + 0.05

 Del. quantity
 cm³/1000 strokes : 225.0

 Tolerance
 cm³/1000 strokes : + 1.0

 Check tolerance
 cm³/1000S. : + 4.0

 Spreed
 Tolerance
 cm³/1000 strokes : 6.0

 Check tolerance
 cm³/1000S. : 9.0

 2nd speed rpm : 600

 Rack travel in mm : 3.70
 Tolerance mm : + 0.30
 Del. quantity
 cm³/1000 strokes : 17.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

 Rack travel in mm : 0.50
 Tolerance mm : + 0.20

 governor spring
 pre-tension
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030

H10

Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 225.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

control lever
 position degree : 87.0
 tolerance degree : + 4.0

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 600
 rack travel mm : 3.70
 Tolerance mm : + 0.10

 rack travel mm : 2.00
 Rated speed rpm : 630
 Tolerance 1/min : + 30

Rated speed rpm : 100
 CRT mm min. : > 19.50

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1030
 rack travel mm : 13.45
 Tolerance mm : + 0.05

Rated speed rpm : 600
 rack travel mm : 13.45
 Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 600
rack travel mm : 3.70
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.01.95
Test oil : ISO 4113
Combination No. : 0402678826
Injection pump
Pump designation : PE8P120A320LS7878
EP type number : 0412628888
Governor
Governor design. : RSV400...1000P1A589
Governor no. : 0421833449
Cust. part No. : 9274608

Customer-spec. information
Customer : LIEBHERR
Motor : D 9308 TI
Power KW : 330.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Tolerance l/h : ± 10.0
Test nozzle holder
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750075

H12

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6
 : - 3- 5- 4

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 259.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 5.0

 Check tolerance
 cm³/1000S. : 9.0
 2nd speed rpm : 400
 Rack travel in mm : 4.60
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 20.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 259.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED

control lever
 position degree : 98.0
 tolerance degree : + 4.0
 rack travel mm : 12.30
 Rated speed rpm : 940
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1000
 Tolerance 1/min : + 15
 rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1160
 rack travel mm : 4.00
 Rated speed rpm : 1020

LOW IDLE

control lever
 position degree : 73.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
 rack travel mm : 3.40

Testing:

Rated speed rpm : 400
 rack travel mm : 4.60
 Tolerance mm : + 0.20
 rack travel mm : 2.00
 Rated speed rpm : 435
 Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 900
 rack travel mm : 13.30
 Tolerance mm : + 0.05
 Rated speed rpm : 500
 rack travel mm : 13.30
 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : +- 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 12.00
Tolerance mm : +- 0.10

Rated speed rpm : 500

Pressure hPa : 900
rack travel mm : 12.90
Tolerance mm : +- 0.05

Pressure hPa : 850
rack travel mm : 12.40
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 275.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 233.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 940
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : +- 0.50
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : +- 10.0
Check tolerance
cm³/1000S. : +- 14.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 4.60
Tolerance mm : +- 0.20
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.12.94
Test oil : ISO 4113

Combination No. : 0402736882

Injection pump
Pump designation : PES6P120A720/3LS7114
: -14
EP type number : 0412726927

Governor
Governor design. : RQ300/1050PA774-3
Governor no. : 0421801451

Cust. part No. : 0210744502

Customer-spec. information
Customer : MB-NFZ
Motor : OM447 LA
Power KW : 265.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Tolerance l/h : + 10.0

Test nozzle holde
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1680750075

H15

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.10

Rack travel in mm : 14.10
Tolerance mm : + 0.10

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 230.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 6.00
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.13
Tolerance mm : + 0.10

Rated speed rpm : 1136
guide sleeve
travel mm : 6.74
Tolerance mm : + 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.40
Tolerance mm : + 0.10

Rated speed rpm : 895
guide sleeve
travel mm : 6.10
Tolerance mm : + 0.10

Rated speed rpm : 404
guide sleeve
travel mm : 4.60
Tolerance mm : + 0.10

Rated speed rpm : 500
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1280
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

Rated speed rpm : 949
guide sleeve
travel mm : 6.30
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 99.0
tolerance degree : + 4.0

rack travel mm : 13.20
Rated speed rpm : 1103
Tolerance 1/min : + 8

rack travel mm : 4.00

Rated speed rpm : 1180
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : + 20

Rated speed rpm : 200
CRT mm min. : > 8.20

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 14.10
Tolerance mm : + 0.10

Rated speed rpm : 1050
rack travel mm : 14.30
Tolerance mm : + 0.10

Rated speed rpm : 700
rack travel mm : 14.80
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

MEASUREMENT

Pressure hPa : 300
rack travel mm : -2.10
Tolerance mm : + 0.05

Pressure hPa : 500
rack travel mm : -0.50
Tolerance mm : + 0.10

Pressure hPa : 1100
rack travel mm : 0.30
Tolerance mm : + 0.05

Pressure hPa : 1200
rack travel mm : 0.60
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 236.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 247.5
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 147.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.20
Rated speed rpm : 1103
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.00
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.01.95
Test oil : ISO 4113

Combination No. : 0402746951

Injection pump
Pump designation : PES6P120A720RS7292
: -1
EP type number : 0412726939

Governor
Governor design. : RGV350...1150PA1074K
Governor no. : 0421815355

Cust. part No. : 0240747902

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 127.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 100
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

°NW after s.o.d. : 3.0

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 3.0

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.50
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 272.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 350

Rack travel in mm : 7.30
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.84
Tolerance mm : \pm 0.15

Rated speed rpm : 1208
guide sleeve
travel mm : 9.41
Tolerance mm : \pm 0.20

Rated speed rpm : 836
guide sleeve
travel mm : 5.58
Tolerance mm : \pm 0.25

H2O

Rated speed rpm : 367
guide sleeve
travel mm : 1.96
Tolerance mm : \pm 0.25

Rated speed rpm : 417
guide sleeve
travel mm : 2.46
Tolerance mm : \pm 0.25

Rated speed rpm : 510
guide sleeve
travel mm : 3.11
Tolerance mm : \pm 0.25

Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1310

Rack travel in mm : 12.50
Tolerance mm : \pm 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 272.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 112.0
tolerance degree : \pm 4.0

rack travel mm : 12.50
Rated speed rpm : 1195

Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1310
 Tolerance 1/min : + 15
 rack travel mm : 0.70
 Tolerance mm : + 0.70
 Rated speed rpm : 1400

LOW IDLE

control lever
 position degree : 65.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
 rack travel mm : 5.00
 Tolerance mm : + 0.10

Rated speed rpm : 250
 CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1150
 rack travel mm : 13.50
 Tolerance mm : + 0.05

Rated speed rpm : 950
 rack travel mm : 13.45
 Tolerance mm : + 0.10

Rated speed rpm : 750
 rack travel mm : 12.80
 Tolerance mm : + 0.10

Rated speed rpm : 600
 rack travel mm : 12.45
 Tolerance mm : + 0.10

ANEROID/ALTITUDE
 COMPENSATOR TEST

SETTING

Rated speed rpm : 1150

H21

Pressure hPa : 1500
 rack travel mm : 13.50
 Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 1150
 rack travel mm : 10.80
 Tolerance mm : + 0.15

Rated speed rpm : 1150

Pressure hPa : 650
 rack travel mm : 12.90
 Tolerance mm : + 0.05

Pressure hPa : 250
 rack travel mm : 11.40
 Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100
 Check
 speed 1/min : > 80
 Rated speed rpm : < 270
 Check
 speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1500
 Rated speed rpm : 750
 Del. quantity
 cm³/1000 strokes : 269.0

Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 5.0

Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

Aneroid pressure
 hPa : 1500
 Rated speed rpm : 600
 Del. quantity
 cm³/1000 strokes : 262.0

Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 184.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 12.50
Rated speed rpm : 1195
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.50
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 7.30
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 26.01.95
Test oil : ISO 4113

Combination No. : 0402746957

Injection pump
Pump designation : PES6P120A720RS7292
: -1
EP type number : 0412726939

Governor
Governor design. : RQV350...1150PA1074
: -2K
Governor no. : 0421815367

Cust. part No. : 0250741002

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power kW : 157.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 100
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

H23

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

°NW after s.o.d. : 3.0
S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 3.0

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 288.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 350

Rack travel in mm : 7.30
Tolerance mm : ± 0.30Del. quantity
cm³/1000 strokes : 13.0Tolerance
cm³/1000 strokes : ± 3.0Check tolerance
cm³/1000S. : ± 6.0Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0**(B) SETTING OF INJECTION PUMP
WITH GOVERNOR**

GUIDE SLEEVE TRAVELRated speed rpm : 350
guide sleeve
travel mm : 1.84
Tolerance mm : ± 0.25Rated speed rpm : 1208
guide sleeve
travel mm : 9.41
Tolerance mm : ± 0.25

Rated speed rpm : 836

H24

guide sleeve
travel mm : 5.58
Tolerance mm : ± 0.25Rated speed rpm : 367
guide sleeve
travel mm : 1.96
Tolerance mm : ± 0.25Rated speed rpm : 417
guide sleeve
travel mm : 2.46
Tolerance mm : ± 0.25Rated speed rpm : 510
guide sleeve
travel mm : 3.11
Tolerance mm : ± 0.25Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITIONcontrol lever
position degree : - 1
Rated speed rpm : 1310Rack travel in mm : 12.95
Tolerance mm : ± 2.50

FULL LOAD DELIVERY AT FULL LOAD STOPRated speed rpm : 1150
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 288.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEEDcontrol lever
position degree : 112.0
tolerance degree : ± 4.0

rack travel mm : 12.95
Rated speed rpm : 1195
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1310
Tolerance 1/min : + 15

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 65.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 13.95
Tolerance mm : + 0.05

Rated speed rpm : 950
rack travel mm : 13.90
Tolerance mm : + 0.10

Rated speed rpm : 750
rack travel mm : 13.05
Tolerance mm : + 0.10

Rated speed rpm : 600
rack travel mm : 12.90
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1500
rack travel mm : 13.95
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1150
rack travel mm : 10.25
Tolerance mm : + 0.15

Rated speed rpm : 1150

Pressure hPa : 800
rack travel mm : 13.00
Tolerance mm : + 0.05

Pressure hPa : 250
rack travel mm : 10.75
Tolerance mm : + 0.15

START CUT-OUT

Rated speed rpm : > 100

Check
speed 1/min : > 80
Rated speed rpm : < 270

Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 276.0
Tolerance

cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 285.0
Tolerance

cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 152.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 12.95

Rated speed rpm : 1195

Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 14.00

Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : ± 15.0

Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 350

rack travel mm : 7.30

Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.01.95
Test oil : ISO 4113

Combination No. : 0402746960

Injection pump
Pump designation : PES6P120A72ORS7292
: -1
EP type number : 0412726939

Governor
Governor design. : RGV350...1150PA1104
: -1K
Governor no. : 0421815371

Cust. part No. : 0250741302

Customer-spec. information

Customer : MB-NFZ
Motor : OM366LA
Power KW : 157.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 100
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

H27

Lube oil : 1409918004
Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1-5-3-6-2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30

Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

°NW after s.o.d. : 3.0

S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 3.0

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.95
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 288.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 350

Rack travel in mm : 7.30
Tolerance mm : + 0.30Del. quantity
cm³/1000 strokes : 13.0Tolerance
cm³/1000 strokes : + 3.0Check tolerance
cm³/1000S. : + 6.0Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0**(B) SETTING OF INJECTION PUMP
WITH GOVERNOR**

GUIDE SLEEVE TRAVELRated speed rpm : 350
guide sleeve
travel mm : 1.84
Tolerance mm : + 0.25Rated speed rpm : 1208
guide sleeve
travel mm : 9.41
Tolerance mm : + 0.25

Rated speed rpm : 836

guide sleeve
travel mm : 5.58
Tolerance mm : + 0.25Rated speed rpm : 367
guide sleeve
travel mm : 1.96
Tolerance mm : + 0.25Rated speed rpm : 417
guide sleeve
travel mm : 2.46
Tolerance mm : + 0.25Rated speed rpm : 510
guide sleeve
travel mm : 3.11
Tolerance mm : + 0.25Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITIONcontrol lever
position degree : - 1
Rated speed rpm : 1340Rack travel in mm : 12.95
Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOPRated speed rpm : 1150
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 288.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEEDcontrol lever
position degree : 108.0
tolerance degree : + 4.0

rack travel mm : 12.95
Rated speed rpm : 1195
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1310
Tolerance 1/min : + 15

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 62.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 13.95
Tolerance mm : + 0.05

Rated speed rpm : 950
rack travel mm : 13.90
Tolerance mm : + 0.10

Rated speed rpm : 750
rack travel mm : 13.05
Tolerance mm : + 0.10

Rated speed rpm : 600
rack travel mm : 12.90
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1500
rack travel mm : 13.95
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1150
rack travel mm : 10.25
Tolerance mm : + 0.15

Rated speed rpm : 1150

Pressure hPa : 800
rack travel mm : 13.00
Tolerance mm : + 0.05

Pressure hPa : 250
rack travel mm : 10.75
Tolerance mm : + 0.15

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 270
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 276.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 285.0
Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 152.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 12.95

Rated speed rpm : 1195

Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 14.00

Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : ± 15.0

Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 350

rack travel mm : 7.30

Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.01.95
Test oil : ISO 4113

Combination No. : 0402746962

Injection pump
Pump designation : PES6P120A72ORS7292
: -1
EP type number : 0412726939

Governor
Governor design. : RGV350...1150PA1104
: -3K
Governor no. : 0421815373

Cust. part No. : 0250741102

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power kW : 127.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 100
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

J03

Lube oil : 1409918004

Test Lines : 1680750075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

°NW after s.o.d. : 3.0
S.o.d. blocking
Barrel no. : 1

°NW after s.o.d. : 3.0

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.50
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 272.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 350

Rack travel in mm : 7.30
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.84
Tolerance mm : + 0.25

Rated speed rpm : 1208
guide sleeve
travel mm : 9.41
Tolerance mm : + 0.25

Rated speed rpm : 836
guide sleeve
travel mm : 5.58
Tolerance mm : + 0.25

Rated speed rpm : 367
guide sleeve
travel mm : 1.96
Tolerance mm : + 0.25

Rated speed rpm : 417
guide sleeve
travel mm : 2.46
Tolerance mm : + 0.25

Rated speed rpm : 510
guide sleeve
travel mm : 3.11
Tolerance mm : + 0.25

Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1310

Rack travel in mm : 12.50
Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 272.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 109.0
tolerance degree : + 4.0

rack travel mm : 12.50
Rated speed rpm : 1195

Tolerance 1/min : +- 5
rack travel mm : 4.00
Rated speed rpm : 1310
Tolerance 1/min : +- 15

rack travel mm : 0.70
Tolerance mm : +- 0.70
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 62.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : +- 0.10

Rated speed rpm : 250
CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 13.50
Tolerance mm : +- 0.05

Rated speed rpm : 950
rack travel mm : 13.45
Tolerance mm : +- 0.10

Rated speed rpm : 750
rack travel mm : 12.80
Tolerance mm : +- 0.10

Rated speed rpm : 600
rack travel mm : 12.45
Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150

J05

Pressure hPa : 1500
rack travel mm : 13.50
Tolerance mm : +- 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1150
rack travel mm : 10.80
Tolerance mm : +- 0.15

Rated speed rpm : 1150

Pressure hPa : 650
rack travel mm : 12.90
Tolerance mm : +- 0.05

Pressure hPa : 250
rack travel mm : 11.40
Tolerance mm : +- 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 270
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 269.0

Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 262.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 184.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 12.50
Rated speed rpm : 1195
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.50
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 7.30
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.01.95
Test oil : ISO 4113
Combination No. : 0402945301
Injection pump
Pump designation : PES5P120A720LS8511
EP type number : 0412925201
Governor
Governor design. : RQV325...950PA1154K
Governor no. : 0421815976

Cust. part No. : 0240749302

Customer-spec. information
Customer : MB-NFZ
Motor : OM449 LA
Power KW : 216.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 2417413082
Inlet press. bar : 3.0
Tolerance bar : + 0.1
Overflow quantity
min. l/h : 90
Tolerance l/h : + 10.0
Test nozzle holde
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Lube oil : 1409918004

J07

Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 3.85
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 14.50
Tolerance mm : + 0.50
Firing order : 1- 3- 5- 4- 2
Phasing : 0-72-144-216-288
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 5

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 3.90
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 40.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 950

Rack travel in mm : 13.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 389.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

2nd speed rpm : 325

Rack travel in mm : 4.70
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 14.0

**(B) SETTING OF INJECTION PUMP
WITH GOVERNOR**

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 2.07
Tolerance mm : ± 0.20

Rated speed rpm : 1006
guide sleeve
travel mm : 7.42
Tolerance mm : ± 0.15

Rated speed rpm : 800
guide sleeve
travel mm : 4.86
Tolerance mm : ± 0.25

Rated speed rpm : 345
guide sleeve
travel mm : 2.33
Tolerance mm : ± 0.25

Rated speed rpm : 395
guide sleeve
travel mm : 2.76
Tolerance mm : ± 0.25

Rated speed rpm : 510
guide sleeve
travel mm : 3.21
Tolerance mm : ± 0.25

Rated speed rpm : 1169
guide sleeve
travel mm : 12.00
Tolerance mm : ± 0.25

Rated speed rpm : 1250
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1160

Rack travel in mm : 12.50
Tolerance mm : ± 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950

Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 389.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 10.0
 Check tolerance
 cm³/1000S. : 14.0

RATED SPEED

control lever
 position degree : 110.0
 tolerance degree : ± 4.0
 rack travel mm : 12.50
 Rated speed rpm : 995
 Tolerance 1/min : ± 5
 rack travel mm : 4.00
 Rated speed rpm : 1085
 Tolerance 1/min : ± 15
 rack travel mm : 0.75
 Tolerance mm : ± 0.75
 Rated speed rpm : 1250

LOW IDLE

control lever
 position degree : 72.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 325
 rack travel mm : 4.70
 Tolerance mm : ± 0.10
 Rated speed rpm : 225
 CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 950
 rack travel mm : 13.50
 Tolerance mm : ± 0.05

Rated speed rpm : 850
 rack travel mm : 12.80
 Tolerance mm : ± 0.10

Rated speed rpm : 550
 rack travel mm : 11.20
 Tolerance mm : ± 0.10

Rated speed rpm : 400
 rack travel mm : 11.00
 Tolerance mm : ± 0.20

Rated speed rpm : 850
 rack travel mm : 10.80
 Tolerance mm : ± 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 950
 Pressure hPa : 1200
 rack travel mm : 13.50
 Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 850
 rack travel mm : 8.10
 Tolerance mm : ± 0.20

Pressure hPa : -
 Rated speed rpm : 350
 rack travel mm : 7.30
 Tolerance mm : ± 0.20

Rated speed rpm : 950
 Pressure hPa : 300
 rack travel mm : 9.30
 Tolerance mm : ± 0.20

Pressure hPa : 600
 rack travel mm : 10.80
 Tolerance mm : ± 0.20

START CUT-OUT

Rated speed rpm : > 140
 Check
 speed 1/min : > 120

Rated speed rpm : < 245
Check speed 1/min : < 265

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 382.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 7.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 372.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 8.0

Aneroid pressure
hPa : 600
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 304.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 6.5

Aneroid pressure
hPa : -
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 207.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 6.0

BREAKAWAY

Rack travel in mm : 12.50
Rated speed rpm : 995
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.00
Tolerance mm : + 0.40
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 4.70
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 14.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.01.95
Test oil : ISO 4113

Combination No. : 0403476037

Injection pump
Pump designation : PES6MM100/72ORS1130
EP type number : 0413406122

Governor
Governor design. : RSV350...1300MWOA318
Governor no. : 0420085052

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM 366 A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

J11

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1280

Rack travel in mm : 11.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 78.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance cm ³ /1000S.	:	6.0
Del. quantity cm ³ /1000 strokes	:	11.0
Tolerance cm ³ /1000 strokes	:	+ 2.0
Check tolerance cm ³ /1000S.	:	+ 4.5
Spread Tolerance cm ³ /1000 strokes	:	3.5
Check tolerance cm ³ /1000S.	:	5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	:	- 3
Rated speed rpm	:	800
Rack travel in mm	:	0.65
Tolerance mm	:	+ 0.35
governor spring pre-tension click setting x	:	4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1280
Aneroid pressure hPa	:	-
Del. quantity cm ³ /1000 strokes	:	78.0
Tolerance cm ³ /1000 strokes	:	+ 1.0
Check tolerance cm ³ /1000S.	:	+ 3.0
Spread Tolerance cm ³ /1000 strokes	:	3.5
Check tolerance cm ³ /1000S.	:	6.0

RATED SPEED

control lever position degree	:	109.0
----------------------------------	---	-------

tolerance degree	:	+ 4.0
rack travel mm	:	10.00
Rated speed rpm	:	1325
Tolerance 1/min	:	+ 5
rack travel mm	:	4.00
Rated speed rpm	:	1395
Tolerance 1/min	:	+ 15
rack travel mm	:	1.00
Tolerance mm	:	+ 0.70
Rated speed rpm	:	1560

LOW IDLE

control lever position degree	:	79.0
tolerance degree	:	+ 4.0

Testing:

Rated speed rpm	:	350
rack travel mm	:	8.10
Tolerance mm	:	+ 0.10
rack travel mm	:	2.00
Rated speed rpm	:	100
CRT mm min.	:	> 19.00

TORQUE CONTROL

Rated speed rpm	:	1280
rack travel mm	:	11.10
Tolerance mm	:	+ 0.10
Rated speed rpm	:	750
rack travel mm	:	11.75
Tolerance mm	:	+ 0.10
Rated speed rpm	:	825
rack travel mm	:	11.50
Tolerance mm	:	+ 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	:	-
Rated speed rpm	:	750
Del. quantity cm ³ /1000 strokes	:	74.0

Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

BREAKAWAY

Rack travel in mm : 10.00
Rated speed rpm : 1325
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.01.95
Test oil : ISO 4113
Combination No. : 0403476059
Injection pump
Pump designation : PES6MW100/72ORS1130
EP type number : 0413406122
Governor
Governor design. : RSV750...1250MWA325
: -1
Governor no. : 0420085112
Cust. part No. :

Customer spec. information
Customer : MB-NFZ
Motor : OM 366 A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1680750089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 3.75
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1230
Rack travel in mm : 10.95
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Speed

Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0

Del. quantity
 cm³/1000 strokes : 12.0

Tolerance
 cm³/1000 strokes : ± 2.0

Check tolerance
 cm³/1000S. : ± 4.5

Spreed
 Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.65
 Tolerance mm : ± 0.35

governor spring
 pre-tension
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1230

Aneroid pressure
 hPa : -

Del. quantity
 cm³/1000 strokes : 78.0

Tolerance
 cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : ± 3.0

Spreed
 Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0

RATED SPEED

control lever
 position degree : 100.0
 tolerance degree : ± 4.0

rack travel mm : 1.00
 Tolerance mm : ± 0.70
 Rated speed rpm : 1350

rack travel mm : 4.00
 Rated speed rpm : 1315

LOW IDLE

control lever
 position degree : 78.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 750
 rack travel mm : 5.65
 Tolerance mm : ± 0.15

rack travel mm : 2.00

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1230
 rack travel mm : 10.95
 Tolerance mm : ± 0.05

Rated speed rpm : 600
 rack travel mm : 10.95
 Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : -

Rated speed rpm : 600

Del. quantity
 cm³/1000 strokes : 57.0

Tolerance
 cm³/1000 strokes : ± 1.5

Check tolerance
 cm³/1000S. : ± 4.0

Spreed
 Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA
Edition : 30.01.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/11F1250R613
Type number : 0 460 414 114
Customer Part-No. :

Customer-specific information
Customer : IVECO-FIAT

Engine : 8045.25.210

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 027

Opening
Pressure> bar: 250.00...253.00

Perforated-plate
diameter> mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 800
Setting value mm: 2.50...2.90
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 800
Setting value bar: 5.70...6.30
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 800
Del. quantity cm³/
> 1000S.: 67.00...68.00
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 3.5
> 1000S.: (4.0)

Low-idle speed regulation

Speed 1/min: 325
Del. quantity cm³/
> 1000S.: 11.00...15.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 3.5
> 1000S.: (3.5)

Full-load speed regulation

Speed 1/min: 1325
Del. quantity cm³/
> 1000S.: 43.00...47.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm³/: 65.00...115.00
mind> 1000S.: 90.00
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 700
TD travel mm: 1.40...2.20
> mm: (1.10...2.50)
electromagnet>Volt: 12
2nd speed 1/min: 1150
TD travel mm: 6.00...6.80
> mm: (5.70...7.10)
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 400
Supply-pump
pressure> bar: 3.70...4.30
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 800
Supply-pump
pressure> bar: 5.70...6.30
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1250
Supply-pump
pressure> bar: 7.70...8.30
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 400
Shutoff
electromagnet>Volt: 12
Overflow : 41.60...86.10
quantity> cm3/10s: (26.60...101.10)
2nd speed 1/min: 1250
Shutoff
electromagnet>Volt: 12
Overflow : 55.00...138.80
quantity> cm3/10s: (40.00...153.00)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1420
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 0.00...3.00
> 1000S.: -
2nd speed 1/min: 1325
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 43.00...47.00
> 1000S.: (39.00...51.00)
3rd speed 1/min: 1300
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 49.00...61.00
> 1000S.: -
4th speed 1/min: 1250
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 58.00...61.00
> 1000S.: (56.00...63.00)
5th speed 1/min: 800
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 67.00...68.00
> 1000S.: (64.5...70.50)
6th speed 1/min: 400
Shutoff

electromagnet>Volt: 12
Del. quantity cm3/: 67.50...70.50
> 1000S.: (65.50...72.50)

Mech. shutoff:

1st speed 1/min: 1250
Del. quantity cm3/: 0.00...3.00
> 1000S.: -
Shutoff
electromagnet>volt: 12

Electr. shutoff:

1st speed 1/min: 325
Del. quantity cm3/: 0.00...3.00
> 1000S.: -
Shutoff
electromagnet>volt: -

Idle delivery:

1st speed 1/min: 325
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 11.00...15.00
> 1000S.: (9.00...17.00)
Dispersion cm3/: 3.5
> 1000S.: (3.5)
2nd speed 1/min: 400
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 0.00...3.00
> 1000S.: -

Automatic starting fuel delivery:

1st speed 1/min: 250
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 45.00...75.00
> 1000S.: (45.00...75.00)
2nd speed 1/min: 150
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 75.00...125.00
> 1000S.: (75.00...125.00)
4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 65.00...115.00
> 1000S.: (65.00...115.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0

Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.2...3.4
KF	mm: 5.5
MS	mm: 0.6...1.0
SVS max.	mm: 6.0
Ya	mm: 36.5...38.5
Yb	mm: 43.9...49.1

Remarks:

⋮



BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA
Edition : 02.02.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/11F1250R613-1
Type number : 0 460 414 115
Customer Part-No. :

Customer-specific information
Customer : IVECO-FIAT

Engine : 8045.25.214

Power KW: 55
Speed 1/min: 1250

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 027

Opening
Pressure> bar: 250.00...253.00

Perforated-plate
diameter> mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: 0.2
> (from BDC): ±0.02(0.04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 800

J20

Setting value mm: 3.10...3.50
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 800
Setting value bar: 4.70...5.30
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 750
Del. quantity cm³/
> 1000S.: 52.50...53.50
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 3.5
> 1000S.: (4.0)

Low-idle speed regulation

Speed 1/min: 350
Del. quantity cm³/
> 1000S.: 6.00...10.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 3.5
> 1000S.: (3.5)

Full-load speed regulation

Speed 1/min: 1350
Del. quantity cm³/
> 1000S.: 37.00...41.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm³/: 65.00...115.00
min> 1000S.: 90.00
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 500
TD travel mm: 0.20...1.00
> mm: (0.00...1.30)
electromagnet>Volt: 12
2nd speed 1/min: 1250
TD travel mm: 6.90...7.50
> mm: (6.50...7.90)
Shutoff

electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump pressure> bar: 3.20...3.80
Shutoff

electromagnet>Volt: 12
2nd speed 1/min: 800
Supply-pump pressure> bar: 4.70...5.30
Shutoff

electromagnet>Volt: 12
3rd speed 1/min: 1250
Supply-pump pressure> bar: 6.90...7.50
Shutoff

electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 400
Shutoff
electromagnet>Volt: 12
Overflow quantity> cm3/10s: 41.60...86.10
(26.60...101.10)
2nd speed 1/min: 1250
Shutoff

electromagnet>Volt: 12
Overflow quantity> cm3/10s: 55.00...138.80
(40.00...153.00)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1450
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 0.00...3.00
> 1000S.: -

2nd speed 1/min: 1400
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 5.00...21.00
> 1000S.: -

3rd speed 1/min: 1350
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 37.00...41.00
> 1000S.: -

4th speed 1/min: 1250
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 50.50...53.50
> 1000S.: (49.00...55.50)

5th speed 1/min: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 52.50...53.50

> 1000S.: (50.00...56.00)
6th speed 1/min: 400
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 48.50...51.50
> 1000S.: (46.50...53.50)

Mech. shutoff:

1st speed 1/min: 1250
Del. quantity cm3/: 0.00...3.00
> 1000S.: -
Shutoff
electromagnet>volt: 12

Electr. shutoff:

1st speed 1/min: 350
Del. quantity cm3/: 0.00...3.00
> 1000S.: -
Shutoff
electromagnet>volt: -

Idle delivery:

1st speed 1/min: 350
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 6.00...10.00
> 1000S.: (4.00...12.00)
Dispersion cm3/: 3.5
> 1000S.: (3.5)
2nd speed 1/min: 450
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 0.00...3.00
> 1000S.: -

Automatic starting fuel delivery:

1st speed 1/min: 250
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 40.00...60.00
> 1000S.: (40.00...60.00)

2nd speed 1/min: 150
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 75.00...125.00
> 1000S.: (75.00...125.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 65.00...115.00
> 1000S.: (65.00...115.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: -
KF	mm: 5.3...5.7
MS	mm: 1.4...1.8
SVS max.	mm: 4.6
Ya	mm: 37.9...39.9
Yb	mm: 44.1...49.1

Remarks:

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Ya = Distance between VE flange and speed-control lever in idle position

Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA
Edition : 02.02.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/11F1900R444-1
Type number : 0 460 414 116
Customer Part-No. :

Customer-specific information
Customer : IVECO-FIAT

Engine : 8040.47.3700

Power KW: 85
Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 027

Opening
Pressure> bar: 250.00...253.00

Perforated-plate
diameter> mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1200

J23

Charge press. hPa: 1000
Setting value mm: 1.70...1.90
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1200
Charge press hPa: 1000
Setting value bar: 5.70...6.30
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1400
Charge press. hPa: 1000
Del. quantity cm³/
> 1000S.: 55.50...56.50
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 4.0
> 1000S.: (4.5)

Full-load del. w/out charge press.:

Speed 1/min: 550
Del. quantity cm³/
> 1000S.: 24.00...25.00
Shutoff
electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 325
Charge press hPa: -
Del. quantity cm³/
> 1000S.: 8.00...12.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 6.0
> 1000S.: (6.5)

Full-load speed regulation

Speed 1/min: 2100
Charge press hPa: 1000
Del. quantity cm³/
> 1000S.: 34.00...40.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Charge press hPa: -
Del. quantity cm³/: 40.00...90.00
mind> 1000S.: 65.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1400
Charge press hPa: 1000
Inj.-qty. cm3/
difference> 1000S.: -25.0...28.0 *
Shutoff
electromagnet>Volt: 12
SP press.-dif.measurement

1.Speed 1/min: 1400
Charge press hPa: 1000
Supply pump
pressure>
difference> bar: -0.1...0.3 *
Shutoff
electromagnet Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1100
Charge press hPa: 1000
TD travel mm: 0.60...1.40
> mm: (0.30...1.70)
electromagnet>Volt: 12
2nd speed 1/min: 1200
Charge press hPa: 1000
TD travel mm: 1.70...1.90
> mm: (1.10...2.50)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1600
Charge press hPa: 1000
TD travel mm: 3.90...4.70
> mm: (3.60...5.00)
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1900
Charge press hPa: 1000
TD travel mm: 4.50...5.30
> mm: (4.20...5.60)
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 700
Charge press. hPa: 1000
Supply-pump
pressure> bar: 3.80...4.40
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1200
Charge press. hPa: 1000
Supply-pump

pressure> bar: 5.70...6.30
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1900
Charge press. hPa: 1000
Supply-pump
pressure> bar: 8.20...8.80
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 700
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Overflow : 75.00...119.40
quantity> cm3/10s: (60.00...134.40)
2nd speed 1/min: 1900
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Overflow : 97.20...180.50
quantity> cm3/10s: (82.20...195.50)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 700
Charge-air pressure-setting
point> hPa: 400
LDA-stroke mm: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 43.00...44.00
> 1000S.: (39.50...47.50)
2nd speed 1/min: 2280
Charge press. hPa: 1000
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 0.00...3.00
> 1000S.: -
3rd speed 1/min: 2200
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 12.00...20.00
> 1000S.: (10.00...22.00)
4th speed 1/min: 2100
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 34.00...40.00
> 1000S.: (32.50...41.50)
5th speed 1/min: 1900
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 56.00...61.00
> 1000S.: (55.0...62.00)

6th speed 1/min: 1750
 Charge press. hPa: 1000
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 55.50...60.50
 > 1000S.: (54.50...61.50)
 7th speed 1/min: 1400
 Charge press. hPa: 1000
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 55.50...56.50
 > 1000S.: (52.50...59.50)
 8th speed 1/min: 1200
 Charge press. hPa: 1000
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 53.50...58.50
 > 1000S.: (52.00...60.00)
 9th speed 1/min: 700
 Charge press. hPa: 1000
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 52.50...61.50
 > 1000S.: (51.50...62.50)
 10th speed 1/min: 550
 Charge press. hPa: -
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 24.00...25.00
 > 1000S.: (21.00...28.00)

Electr. shutoff:

1st speed 1/min: 325
 Del. quantity cm³/: 0.00...3.00
 > 1000S.: -
 Shutoff
 electromagnet>volt: -

Idle delivery:

1st speed 1/min: 325
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 8.00...12.00
 > 1000S.: (6.00...14.00)
 Dispersion cm³/: 6.5
 > 1000S.: (6.5)
 2nd speed 1/min: 450
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 0.00...3.00
 > 1000S.: -

Load-dependent start of delivery:
 Inj.-qty.dif.measurement:

1st speed 1/min: 1400

Charge press. hPa: 1000
 Inj.-qty. cm³/ : -25.0.-31.0 "
 difference> 1000S.: (-24.0.-32.0) "
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1400
 Charge press. hPa: 1000
 Inj.-qty. cm³/: 0.0...3.0 z'
 difference> 1000S.: -
 Shutoff
 electromagnet Volt: 12

TD-travel dif.measurement:
 correttore anticipo iniezione (SV):
 1st speed 1/min: 1400
 Charge press. hPa: 1000
 TD-travel : -0.7...-0.9 "
 difference> mm: -
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1400
 Charge press. hPa: 1000
 TD-travel : -1.0...-1.4 "

Automatic starting fuel delivery:

1st speed 1/min: 500
 Charge press. hPa: -
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 14.00...30.00
 > 1000S.: (14.00...30.00)

2nd speed 1/min: 200
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 55.00...105.00
 > 1000S.: (55.00...105.00)

4th speed 1/min: 100
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 40.00...90.00
 > 1000S.: (40.00...90.00)

Shutoff electromagnet:

Cut-in
 >min voltage : 10.0
 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation:
 K mm: 3.2...3.4
 KF mm: KOT
 MS1 mm: 1.5...1.8
 SVS max. mm: -
 LDA stroke mm: -
 Ya mm: 37.9...39.9

Yb mm: 43.7...48.9

Remarks:

⋮

Ya = Distance between VE flange and speed-control lever in idle position

Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control lever on distributor-head end

Pump with slave plunger

Z = Absolute delivery



BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA
Edition : 31.01.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/11F1750R618
Type number : 0 460 414 117
Customer Part-No. :

Customer-specific information
Customer : IVECO-FIAT

Engine : 8040.SC27.02 AIFO

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 027

Opening
Pressure> bar: 250.00...253.00

Perforated-plate
diameter> mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1400
Charge press. hPa: 1200
Setting value mm: 2.20...2.40
Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1400
Charge press hPa: 1200
Setting value bar: 6.90...7.50
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1000
Charge press. hPa: 1200
Del. quantity cm³/
> 1000S.: 45.50...46.50
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 4.0
> 1000S.: (4.5)

Full-load del. w/out charge press.:

Speed 1/min: 550
Del. quantity cm³/
> 1000S.: 26.00...27.00
Shutoff
electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 325
Charge press hPa: -
Del. quantity cm³/
> 1000S.: 10.00...14.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 6.0
> 1000S.: (6.5)

Full-load speed regulation

Speed 1/min: 1900
Charge press hPa: 1200
Del. quantity cm³/
> 1000S.: 23.00...27.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Charge press hPa: -
Del. quantity cm³/: 40.00...90.00
mind> 1000S.: 65.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1400
Charge press hPa: 1200
Inj.-qty. cm3/
difference> 1000S.: -19.0...21.0 *
Shutoff
electromagnet>Volt: 12
SP press.-dif.measurement

1.Speed 1/min: 1400
Charge press hPa: 1200
Supply pump
pressure>
difference> bar: -0.1...0.3 *
Shutoff
electromagnet Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1250
Charge press hPa: 1200
TD travel mm: 1.10...1.70
> mm: (0.70...2.10)

electromagnet>Volt: 12
2nd speed 1/min: 1400
Charge press hPa: 1200
TD travel mm: 2.20...2.40
> mm: (1.60...3.00)

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1600
Charge press hPa: 1200
TD travel mm: 3.10...3.70
> mm: (2.70...4.10)

Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1750
Charge press hPa: 1200
TD travel mm: 3.80...4.40
> mm: (3.40...4.80)

Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 800
Charge press. hPa: 1200
Supply-pump
pressure> bar: 4.20...4.80
Shutoff

electromagnet>Volt: 12
2nd speed 1/min: 1400
Charge press. hPa: 1200
Supply-pump
pressure> bar: 6.90...7.50
Shutoff
electromagnet>Volt: 12

3rd speed 1/min: 1750
Charge press. hPa: 1200
Supply-pump
pressure> bar: 8.40...9.00
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 700
Charge press. hPa: 1200
Shutoff
electromagnet>Volt: 12
Overflow : 75.00...119.40
quantity> cm3/10s: (60.00...134.40)

2nd speed 1/min: 1750
Charge press. hPa: 1200
Shutoff
electromagnet>Volt: 12
Overflow : 97.20...180.50
quantity> cm3/10s: (82.20...195.50)

Delivery-quant. and breakaway char.:

1st speed 1/min: 800
Charge-air pressure-setting
point> hPa: 350
LDA-stroke mm: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 39.00...40.00
> 1000S.: (36.00...43.00)

2nd speed 1/min: 2000
Charge press. hPa: 1200
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 0.00...3.00
> 1000S.: -

3rd speed 1/min: 1900
Charge press. hPa: 1200
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 23.00...27.00
> 1000S.: (20.50...29.50)

4th speed 1/min: 1825
Charge press. hPa: 1200
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 38.00...46.00
> 1000S.: (36.00...48.00)

5th speed 1/min: 1750
Charge press. hPa: 1200
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 45.50...50.50
> 1000S.: (44.5...51.50)

6th speed 1/min: 1000
Charge press. hPa: 1200
Shutoff

electromagnet>Volt: 12
 Del. quantity cm³/: 46.50...47.50
 > 1000S.: (43.50...50.50)
 7th speed 1/min: 800
 Charge press. hPa: -
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 26.50...31.50
 > 1000S.: (25.50...32.50)
 8th speed 1/min: 800
 Charge press. hPa: 1200
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 44.50...53.50
 > 1000S.: (43.50...54.50)
 9th speed 1/min: 550
 Charge press. hPa: -
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 26.00...27.00
 > 1000S.: (23.00...29.00)

Electr. shutoff:

1st speed 1/min: 325
 Del. quantity cm³/: 0.00...3.00
 > 1000S.: -
 Shutoff
 electromagnet>volt: -

Idle delivery:

1st speed 1/min: 325
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 10.00...14.00
 > 1000S.: (8.00...16.00)
 Dispersion cm³/: 6.5
 > 1000S.: (6.5)
 2nd speed 1/min: 450
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 0.00...3.00
 > 1000S.: -

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1400
 Charge press. hPa: 1200
 Inj.-qty. cm³/ : -19.0.-25.0 "
 difference> 1000S.: (-18.0.-26.0)"
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1400
 Charge press. hPa: 1200
 Inj.-qty. cm³/ : 0.0...3.0 Z'
 difference> 1000S.: -

Shutoff
 electromagnet Volt: 12
 TD-travel dif.measurement:
 correttore anticipo iniezione (SV):
 1st speed 1/min: 1400
 Charge press. hPa: 1200
 TD-travel : -0.5...-0.7 "
 difference> mm: -
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1400
 Charge press. hPa: 1200
 TD-travel : -0.8...-1.6 '

Automatic starting fuel delivery:

1st speed 1/min: 500
 Charge press. hPa: -
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 14.00...30.00
 > 1000S.: (14.00...30.00)
 2nd speed 1/min: 200
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 55.00...105.00
 > 1000S.: (55.00...105.00)
 4th speed 1/min: 100
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 40.00...90.00
 > 1000S.: (40.00...90.00)

Shutoff electromagnet:

Cut-in
 >min voltage : 10.0
 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
 K mm: K1
 KF mm: -
 MS1 mm: 1.3...1.6
 SVS max. mm: -
 LDA stroke mm: -
 Ya mm: 37.9...39.9
 Yb mm: 39.6...44.6

Remarks:

:
 :
 Ya = Distance between VE flange and
 speed-control lever in idle
 position
 Measurement point = edge of control

Lever on drive end

Y_b = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end



BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : ROV
Edition : 31.01.95
replaces : -
Calibrating oil : ISO-4113
Injection pump : VE4/11F2250L619
Type number : 0 460 414 118
Customer Part-No. :

Customer-specific information
Customer : ROVER

Engine : TCI-EM

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil
return>temp. > °C
with>thermometer> : 54.00...56.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 116

Opening
Pressure> bar: 207.00...210.00

Perforated-plate
diameter> mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Start of delivery block
Piston stroke mm: 0.55
> mm: +0.02(0.06)
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000
Charge press. hPa: 1500
Setting value mm: 7.20...7.60
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1000
Charge press hPa: 1500
Setting value bar: 6.70...7.30
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1250
Charge press. hPa: 1500
Del. quantity cm3/
> 1000S.: 63.00...64.00
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 3.0
> 1000S.: (4.0)

Full-load del. w/out charge press.:

Speed 1/min: 700
Del. quantity cm3/
> 1000S.: 42.00...43.00
Shutoff
electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 375
Charge press hPa: -
Del. quantity cm3/
> 1000S.: 6.00...10.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 4.0
> 1000S.: (4.5)

Full-load speed regulation

Speed 1/min: 2580
Charge press hPa: 1500
Del. quantity cm3/
> 1000S.: 18.00...22.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Charge press hPa: -
Del. quantity cm3/: 89.0...91.0 "V"
mind> 1000S.: 81.50
Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 800
Charge press hPa: 1500
TD travel mm: 6.20...7.00
> mm: (5.70...7.50)

electromagnet>Volt: 12
2nd speed 1/min: 1000
Charge press hPa: 1500
TD travel mm: 7.20...7.60
> mm: (6.60...8.20)

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1400
Charge press hPa: 1500
TD travel mm: 8.30...9.10
> mm: (7.80...9.60)

Shutoff
electromagnet>Volt: 12
4th speed 1/min: 2000
Charge press hPa: 1500
TD travel mm: 9.50...10.10
> mm: -

Shutoff
electromagnet>Volt: 12
5th speed 1/min: 2000
Charge press. hPa: 1500
TD travel mm: 0.0...0.6
> mm: -

Timing valve Volt: 12
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 800
Charge press. hPa: 1500
Supply-pump pressure> bar: 6.40...7.00
Shutoff

electromagnet>Volt: 12
2nd speed 1/min: 1400
Charge press. hPa: 1500
Supply-pump pressure> bar: 7.20...7.80
Shutoff

electromagnet>Volt: 12
3rd speed 1/min: 1000
Charge press. hPa: 1500
Supply-pump pressure> bar: 6.70...7.30
Shutoff

electromagnet>Volt: 12

Overlow quantity at overflow valve:

K04

1st speed 1/min: 700
Charge press. hPa: 1500
Shutoff
electromagnet>Volt: 12
Overflow : 41.60...122.20
quantity> cm³/10s: (26.60...137.20)
2nd speed 1/min: 2000
Charge press. hPa: 1500
Shutoff
electromagnet>Volt: 12
Overflow : 63.80...175.00
quantity> cm³/10s: (48.80...190.00)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 1000
Charge-air pressure-setting point> hPa: 500
LDA-stroke mm: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 52.00...53.00
> 1000S.: (49.30...55.70)
2nd speed 1/min: 2650
Charge press. hPa: 1500
Shutoff

electromagnet Volt: 12
Del. quantity cm³/: 0.00...3.00
> 1000S.: -
3rd speed 1/min: 2580
Charge press. hPa: 1500
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 18.00...22.00
> 1000S.: (15.00...25.00)
4th speed 1/min: 2450
Charge press. hPa: 1500
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 43.00...51.00
> 1000S.: (41.00...53.00)
5th speed 1/min: 2000
Charge press. hPa: 1500
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 58.50...62.50
> 1000S.: -
6th speed 1/min: 1600
Charge press. hPa: 1500
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 58.50...61.50
> 1000S.: (56.50...63.50)
7th speed 1/min: 1250
Charge press. hPa: 1500
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 63.00...64.00

> 1000S.: (60.70...66.30)
8th speed 1/min: 1000
Charge press. hPa: 1500
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 66.00...71.00
> 1000S.: (64.50...72.50)
9th speed 1/min: 700
Charge press. hPa: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 42.00...43.00
> 1000S.: (39.30...45.70)

Electr. shutoff:

1st speed 1/min: 375
Del. quantity cm³/: 0.00...3.00
> 1000S.: -
Shutoff
electromagnet>volt: -

Idle delivery:

1st speed 1/min: 375
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 6.00...10.00
> 1000S.: (4.00...12.00)
Dispersion cm³/: 4.0
> 1000S.: (4.5)
2nd speed 1/min: 450
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 0.00...3.00
> 1000S.: -

Automatic starting fuel delivery:

1st speed 1/min: 320
Charge press. hPa: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 25.00...65.00
> 1000S.: (25.00...65.00)
2nd speed 1/min: 100
Charge press. hPa: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 85.00...135.00
> 1000S.: (85.00...135.00)

3rd speed 1/min: 100
Charge press. hPa: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 49.0...51.0 "L"

K05

> 1000S.: (42.50...57.50)
4th speed 1/min: 100
Charge press. hPa: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 89.0...91.0 "V"
> 1000S.: (81.50...98.50)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.2...3.4
KF	mm: KOT
MS	mm: -
SVS max.	mm: 3.5
Ya	mm: 35.8...39.8
Yb	mm: 55.1...64.9

Remarks:

⋮
Ya = Distance between VE flange and speed-control lever in idle position
Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Starting delivery check
V = Speed-control lever in full-load position

Starting delivery check
L = Speed-control lever in idle position

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FOR
Edition : 31.01.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/11F2000R624
Type number : 0 460 414 119
Customer Part-No. :

Customer-specific information
Customer : FORD

Engine : 2.5 DI

Power KW: 57
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 114

Opening
Pressure> bar: 207.00...210.00

Perforated-plate
diameter> mm: 0.4

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250

K06

Setting value mm: 2.60...2.80
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250
Setting value bar: 6.90...7.50
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 500
Del. quantity cm³/
> 1000S.: 25.30...25.70 F
Shutoff
electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 425
Charge press hPa: -
Del. quantity cm³/
> 1000S.: 6.00...8.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/
> 1000S.: (4.0)

Full-load speed regulation

Speed 1/min: 2200
Del. quantity cm³/
> 1000S.: 22.00...24.00
Shutoff
electromagnet>Volt: 12
Dispersion cm³/
> 1000S.: (4.0)

Start:

Speed 1/min: 100
Charge press hPa: -
Del. quantity cm³/
mind> 1000S.: 26.00...66.00
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 800
TD travel mm: 0.50...1.30
> mm: (0.20...1.60)
electromagnet>Volt: 12
2nd speed 1/min: 1200
TD travel mm: 2.60...2.80

> mm: (2.20...3.20)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 2000
TD travel mm: 4.90...5.70
> mm: (4.60...6.00)

Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump
pressure> bar: 5.20...5.80
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1000
Supply-pump
pressure> bar: 6.40...7.00
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1250
Supply-pump
pressure> bar: 6.90...7.50
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 2000
Supply-pump
pressure> bar: 8.6...9.2
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Overflow quantity> cm3/10s: 97.20...141.60
(82.20...156.60)
2nd speed 1/min: 1950
Shutoff
electromagnet>Volt: 12
Overflow quantity> cm3/10s: 115.2...184.70
(100.2...199.70)

Delivery-quant. and breakaway char.:

1st speed 1/min: 2400
LDA-stroke mm: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 0.00...5.00
> 1000S.: -
2nd speed 1/min: 2200
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 22.0...24.0
> 1000S.: (19.0...28.0)
3rd speed 1/min: 2140

Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 26.50...32.50
> 1000S.: (23.50...35.50)
4th speed 1/min: 1950
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 35.8...38.2 D
> 1000S.: (34.50...39.50) D
5th speed 1/min: 1700
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 36.30...38.70
> 1000S.: (35.0...40.00)
6th speed 1/min: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 33.5...34.5 E
> 1000S.: (31.5...36.5) E
7th speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 25.3...25.7 F
> 1000S.: (22.5...28.5) F

Electr. shutoff:

1st speed 1/min: 425
Del. quantity cm3/: 0.00...3.00
> 1000S.: -
Shutoff
electromagnet>volt: -

Idle delivery:

1st speed 1/min: 425
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 6.00...8.00
> 1000S.: (3.00...11.00)
Dispersion cm3/: 3.0
> 1000S.: (4.0)
2nd speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 0.00...6.00
> 1000S.: -

Part-load del.at 3rd inj.-qty.
terza fermo della portata
stop (EGR set)
scarico) (ARF)
gaz d'échappement-ARF)
Spacing mm: 20.0

1st speed 1/min: 1250
Shutoff
electromagnet>Volt: 12

Del. quantity cm³/: 20.8...21.8
> 1000S.: (18.8...23.8)

Automatic starting fuel delivery:

1st speed 1/min: 480

Shutoff

electromagnet>Volt: 12

Del. quantity cm³/: 19.00...29.00
> 1000S.: (19.00...29.00)

2nd speed 1/min: 300

Shutoff

electromagnet>Volt: 12

Del. quantity cm³/: 26.00...56.00
> 1000S.: (26.00...56.00)

4th speed 1/min: 100

Shutoff

electromagnet>Volt: 12

Del. quantity cm³/: 26.00...66.00
> 1000S.: (26.00...66.00)

Shutoff electromagnet:

Cut-in

>min voltage : 10.0

Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: 2.7...2.9

KF mm: KOT

MS mm: 1.6...2.0

Ya mm: 42.8...45.8

Yb mm: 59.5...71.5

Remarks:

⋮

Ya = Distance between VE flange and
speed-control lever in idle
position

Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position

Measurement point = edge of control
lever on distributor-head end

Permissible port/port scatter with
stop test, electrical = max. 5.0
ccm/1000 S.

K08

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA
Edition : 31.01.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/11F1900R542-1
Type number : 0 460 414 120
Customer Part-No. :

Customer-specific information
Customer : IVECO-FIAT

Engine : 8040.47.2200

Power KW: 85
Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 027

Opening
Pressure> bar: 250.00...253.00

Perforated-plate
diameter> mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1200

Charge press. hPa: 1000
Setting value mm: 1.70...1.90
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1200
Charge press hPa: 1000
Setting value bar: 5.70...6.30
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1400
Charge press. hPa: 1000
Del. quantity cm³/
> 1000S.: 55.50...56.50
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 4.0
> 1000S.: (4.5)

Full-load del. w/out charge press.:

Speed 1/min: 550
Del. quantity cm³/
> 1000S.: 24.00...25.00
Shutoff
electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 325
Charge press hPa: -
Del. quantity cm³/
> 1000S.: 8.00...12.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 6.0
> 1000S.: (6.5)

Full-load speed regulation

Speed 1/min: 2100
Charge press hPa: 1000
Del. quantity cm³/
> 1000S.: 34.00...41.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Charge press hPa: -
Del. quantity cm³/: 40.00...90.00
mind> 1000S.: 65.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1400
Charge press hPa: 1000
Inj.-qty. cm³/
difference> 1000S.: -25.0...28.0 *
Shutoff
electromagnet>Volt: 12
SP press.-dif.measurement

1.Speed 1/min: 1400
Charge press hPa: 1000
Supply pump
pressure>
difference> bar: -0.1...0.3 *
Shutoff
electromagnet Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1100
Charge press hPa: 1000
TD travel mm: 0.60...1.40
> mm: (0.30...1.70)
electromagnet>Volt: 12
2nd speed 1/min: 1200
Charge press hPa: 1000
TD travel mm: 1.70...1.90
> mm: (1.10...2.50)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1600
Charge press hPa: 1000
TD travel mm: 3.90...4.70
> mm: (3.60...5.00)
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1900
Charge press hPa: 1000
TD travel mm: 4.50...5.30
> mm: (4.20...5.60)
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 700
Charge press. hPa: 1000
Supply-pump
pressure> bar: 3.80...4.40
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1200
Charge press. hPa: 1000
Supply-pump

pressure> bar: 5.70...6.30
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1900
Charge press. hPa: 1000
Supply-pump
pressure> bar: 8.20...8.80
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 700
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Overflow : 75.00...119.40
quantity> cm³/10s: (60.00...134.40)
2nd speed 1/min: 1900
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Overflow : 97.20...180.50
quantity> cm³/10s: (82.20...195.50)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 700
Charge-air pressure-setting
point> hPa: 400
LDA-stroke mm: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 43.00...44.00
> 1000S.: (39.50...47.50)
2nd speed 1/min: 2280
Charge press. hPa: 1000
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 0.00...3.00
> 1000S.: -
3rd speed 1/min: 2200
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 12.00...20.00
> 1000S.: (10.00...22.00)
4th speed 1/min: 2100
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 34.00...40.00
> 1000S.: (32.50...41.50)
5th speed 1/min: 1900
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 56.00...61.00
> 1000S.: (55.0...62.00)

6th speed 1/min: 1750
 Charge press. hPa: 1000
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 55.50...60.50
 > 1000S.: (54.50...61.50)
 7th speed 1/min: 1400
 Charge press. hPa: 1000
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 55.50...56.50
 > 1000S.: (52.50...59.50)
 8th speed 1/min: 1200
 Charge press. hPa: 1000
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 53.50...58.50
 > 1000S.: (52.00...60.00)
 9th speed 1/min: 700
 Charge press. hPa: 1000
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 52.50...61.50
 > 1000S.: (51.50...62.50)
 10th speed 1/min: 550
 Charge press. hPa: -
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 24.00...25.00
 > 1000S.: (21.00...28.00)

Electr. shutoff:

1st speed 1/min: 325
 Del. quantity cm³/: 0.00...3.00
 > 1000S.: -
 Shutoff
 electromagnet>volt: -

Idle delivery:

1st speed 1/min: 325
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 8.00...12.00
 > 1000S.: (6.00...14.00)
 Dispersion cm³/: 6.5
 > 1000S.: (6.5)
 2nd speed 1/min: 450
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 0.00...3.00
 > 1000S.: -

Load-dependent start of delivery:
 Inj.-qty.dif.measurement:

1st speed 1/min: 1400

Charge press. hPa: 1000
 Inj.-qty. cm³/ : -25.0.-31.0 "
 difference> 1000S.: (-24.0.-32.0) "
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1400
 Charge press. hPa: 1000
 Inj.-qty. cm³/: 0.0...3.0 z'
 difference> 1000S.: -
 Shutoff
 electromagnet Volt: 12

TD-travel dif.measurement:
 correttore anticipo iniezione (SV):
 1st speed 1/min: 1400
 Charge press. hPa: 1000
 TD-travel : -0.7...-0.9 "
 difference> mm: -
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1400
 Charge press. hPa: 1000
 TD-travel : -1.0...-1.4 '

Automatic starting fuel delivery:

1st speed 1/min: 500
 Charge press. hPa: -
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 14.00...30.00
 > 1000S.: (14.00...30.00)

2nd speed 1/min: 200
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 55.00...105.00
 > 1000S.: (55.00...105.00)

4th speed 1/min: 100
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 40.00...90.00
 > 1000S.: (40.00...90.00)

Shutoff electromagnet:

Cut-in
 >min voltage : 10.0
 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
 K mm: 3.2...3.4
 KF mm: KOT
 MS1 mm: 1.6...1.9
 SVS max. mm: -
 LDA stroke mm: -
 Ya mm: 37.9...39.9

Yb mm: 43.7...48.9

Remarks:

⋮

Ya = Distance between VE flange and speed-control lever in idle position

Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control lever on distributor-head end

Pump with slave plunger

Z = Absolute delivery



BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA
Edition : 30.01.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/11F1900R494-1
Type number : 0 460 414 121
Customer Part-No. :

Customer-specific information
Customer : IVECO-FIAT

Engine : 8040.47.2585

Power KW: 85
Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 027

Opening
Pressure> bar: 250.00...253.00

Perforated-plate
diameter> mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1200

K13

Charge press. hPa: 1000
Setting value mm: 1.70...1.90
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1200
Charge press hPa: 1000
Setting value bar: 5.70...6.30
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1400
Charge press. hPa: 1000
Del. quantity cm3/
> 1000S.: 56.00...57.00
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 4.0
> 1000S.: (4.5)

Full-load del. w/out charge press.:

Speed 1/min: 550
Del. quantity cm3/
> 1000S.: 24.00...25.00
Shutoff
electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 325
Charge press hPa: -
Del. quantity cm3/
> 1000S.: 8.00...12.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 6.0
> 1000S.: (6.5)

Full-load speed regulation

Speed 1/min: 2100
Charge press hPa: 1000
Del. quantity cm3/
> 1000S.: 34.00...41.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Charge press hPa: -
Del. quantity cm3/: 40.00...90.00
mind> 1000S.: 65.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1400
Charge press hPa: 1000
Inj.-qty. cm³/
difference> 1000S.: -25.0...28.0 *
Shutoff
electromagnet>Volt: 12
SP press.-dif.measurement

1.Speed 1/min: 1400
Charge press hPa: 1000
Supply pump
pressure>
difference> bar: -0.1...0.3 *
Shutoff
electromagnet Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1100
Charge press hPa: 1000
TD travel mm: 0.60...1.40
> mm: (0.30...1.70)
electromagnet>Volt: 12
2nd speed 1/min: 1200
Charge press hPa: 1000
TD travel mm: 1.70...1.90
> mm: (1.10...2.50)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1600
Charge press hPa: 1000
TD travel mm: 3.90...4.70
> mm: (3.60...5.00)
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1900
Charge press hPa: 1000
TD travel mm: 4.50...5.30
> mm: (4.20...5.60)
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 700
Charge press. hPa: 1000
Supply-pump
pressure> bar: 3.80...4.40
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1200
Charge press. hPa: 1000
Supply-pump

pressure> bar: 5.70...6.30
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1900
Charge press. hPa: 1000
Supply-pump
pressure> bar: 8.20...8.80
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 700
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Overflow : 75.00...119.40
quantity> cm³/10s: (60.00...134.40)
2nd speed 1/min: 1900
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Overflow : 97.20...180.50
quantity> cm³/10s: (82.20...195.50)

Delivery-quant. and breakaway char.:

1st speed 1/min: 700
Charge-air pressure-setting
point> hPa: 400
LDA-stroke mm: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 43.00...44.00
> 1000S.: (39.50...47.50)
2nd speed 1/min: 2280
Charge press. hPa: 1000
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 0.00...3.00
> 1000S.: -
3rd speed 1/min: 2200
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 12.00...20.00
> 1000S.: (10.00...22.00)
4th speed 1/min: 2100
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 34.00...40.00
> 1000S.: (32.50...41.50)
5th speed 1/min: 1900
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 56.00...61.00
> 1000S.: (55.0...62.00)

6th speed 1/min: 1750
 Charge press. hPa: 1000
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 55.50...60.50
 > 1000S.: (54.50...61.50)
 7th speed 1/min: 1400
 Charge press. hPa: 1000
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 55.50...56.50
 > 1000S.: (52.50...59.50)
 8th speed 1/min: 1200
 Charge press. hPa: 1000
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 53.50...58.50
 > 1000S.: (52.00...60.00)
 9th speed 1/min: 700
 Charge press. hPa: 1000
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 52.50...61.50
 > 1000S.: (51.50...62.50)
 10th speed 1/min: 550
 Charge press. hPa: -
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 24.00...25.00
 > 1000S.: (21.00...28.00)

Electr. shutoff:

1st speed 1/min: 325
 Del. quantity cm³/: 0.00...3.00
 > 1000S.: -
 Shutoff
 electromagnet>volt: -

Idle delivery:

1st speed 1/min: 325
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 8.00...12.00
 > 1000S.: (6.00...14.00)
 Dispersion cm³/: 6.5
 > 1000S.: (6.5)
 2nd speed 1/min: 450
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 0.00...3.00
 > 1000S.: -

Load-dependent start of delivery:
 Inj.-qty.dif.measurement:

1st speed 1/min: 1400

K15

Charge press. hPa: 1000
 Inj.-qty. cm³/ : -25.0.-31.0 "
 difference> 1000S.: (-24.0.-32.0)"
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1400
 Charge press. hPa: 1000
 Inj.-qty. cm³/: 0.0...3.0 Z'
 difference> 1000S.: -
 Shutoff
 electromagnet Volt: 12

TD-travel dif.measurement:
 correttore anticipo iniezione (SV):
 1st speed 1/min: 1400
 Charge press. hPa: 1000
 TD-travel : -0.7...-0.9 "
 difference> mm: -
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1400
 Charge press. hPa: 1000
 TD-travel : -1.0...-1.4 "

Automatic starting fuel delivery:

1st speed 1/min: 500
 Charge press. hPa: -
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 14.00...30.00
 > 1000S.: (14.00...30.00)

2nd speed 1/min: 200
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 55.00...105.00
 > 1000S.: (55.00...105.00)

4th speed 1/min: 100
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 40.00...90.00
 > 1000S.: (40.00...90.00)

Shutoff electromagnet:

Cut-in
 >min voltage : 10.0
 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
 K mm: 3.2...3.4
 KF mm: KOT
 MS_f mm: 1.6...1.9
 SVS max. mm: -
 LDA stroke mm: -
 Ya mm: 37.9...39.9

Yb mm: 43.7...48.9

Remarks:

⋮

Ya = Distance between VE flange and speed-control lever in idle position

Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control lever on distributor-head end

Pump with slave plunger

Z = Absolute delivery



BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MWM
Edition : 11.11.94
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/12F1300R566
Type number : 0 460 424 103
Customer Part-No. :

Customer-specific information
Customer : MWM

Engine : 4.10T

TEST BENCH REQUIREMENTS

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 109

Opening
Pressure> bar: 207.00...210.00

Perforated-plate
diameter> mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000
Charge press. hPa: 1600
Setting value mm: 2.70...3.10
Shutoff
electromagnet>Volt: 12

K17

Supply-pump pressure

Speed 1/min: 1000
Charge press hPa: 1600
Setting value bar: 5.60...6.20
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 800
Charge press. hPa: 1600
Del. quantity cm³/
> 1000S.: 82.50...83.50
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 4.0
> 1000S.: (4.5)

Full-load del. w/out charge press.:

Speed 1/min: 500
Del. quantity cm³/
> 1000S.: 54.50...58.50
Shutoff
electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 375
Charge press hPa: -
Del. quantity cm³/
> 1000S.: 13.50...17.50
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 3.5
> 1000S.: (5.0)

Full-load speed regulation

Speed 1/min: 1400
Charge press hPa: 1600
Del. quantity cm³/
> 1000S.: 77.00...83.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Charge press hPa: -
Del. quantity cm³/: 70.00...110.00
mind> 1000S.: 70.00
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 800
 Charge press hPa: 1600
 TD travel mm: 0.50...1.30
 > mm: (0.20...1.60)
 electromagnet>Volt: 12
 2nd speed 1/min: 1000
 Charge press hPa: 1600
 TD travel mm: 2.70...3.10
 > mm: (2.20...3.60)
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 1300
 Charge press hPa: 1600
 TD travel mm: 3.90...4.70
 > mm: (3.60...5.00)
 Shutoff
 electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 800
 Charge press. hPa: 1600
 Supply-pump pressure> bar: 4.80...5.40
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1000
 Charge press. hPa: 1600
 Supply-pump pressure> bar: 5.60...6.20
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 1300
 Charge press. hPa: 1600
 Supply-pump pressure> bar: 6.70...7.30
 Shutoff
 electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 550
 Charge press. hPa: -
 Shutoff
 electromagnet>Volt: 12
 Overflow quantity> cm³/10s: 97.20...138.80
 2nd speed 1/min: 1300
 Charge press. hPa: 1600
 Shutoff
 electromagnet>Volt: 12
 Overflow quantity> cm³/10s: 111.10...194.4

Delivery-quant. and breakaway char.:

1st speed 1/min: 700

Charge-air pressure-setting

point> hPa: 600
 LDA-stroke mm: -
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 69.50...73.50
 > 1000S.: (67.00...76.00)
 2nd speed 1/min: 1800
 Charge press. hPa: 1600
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm³/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 3rd speed 1/min: 1600
 Charge press. hPa: 1600
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 28.00...42.00
 > 1000S.: (25.00...45.00)
 4th speed 1/min: 1400
 Charge press. hPa: 1600
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 77.00...83.00
 > 1000S.: (74.00...86.00)
 5th speed 1/min: 1300
 Charge press. hPa: 1600
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 88.50...92.50
 > 1000S.: (87.00...94.00)
 6th speed 1/min: 1000
 Charge press. hPa: 1600
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 82.00...88.00
 > 1000S.: (80.00...90.00)
 7th speed 1/min: 800
 Charge press. hPa: 1600
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 82.50...83.50
 > 1000S.: (80.00...86.00)
 8th speed 1/min: 500
 Charge press. hPa: -
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 54.50...58.50
 > 1000S.: (52.00...61.00)

Electr. shutoff:

1st speed 1/min: 375
 Charge press. hPa: -
 Del. quantity cm³/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 Shutoff
 electromagnet>volt: -

Measurement point = edge of control lever on distributor-head end

Idle delivery:

1st speed 1/min: 375
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 13.50...17.50
> 1000S.: (11.50...19.50)
Dispersion cm³/: 3.5
> 1000S.: (5.0)
2nd speed 1/min: 300
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 33.0...41.0
> 1000S.: (31.0...43.0)
3rd speed 1/min: 450
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 0.00...6.00
> 1000S.: (0.00...6.00)

Automatic starting fuel delivery:

1st speed 1/min: 250
Charge press. hPa: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 25.00...65.00
> 1000S.: (25.00...65.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
K mm: 3.6...3.8
KF mm: KOT
MS1 mm: 1.0...1.3
SVS max. mm: -
LDA stroke mm: -
Ya mm: 48.5...50.5
Yb mm: 32.8...41.2

Remarks:

⋮

Ya = Distance between VE flange and speed-control lever in idle position
Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CDC
Edition : 31.01.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE6/12F1100R610
Type number : 0 460 426 240
Customer Part-No. :

Customer-specific information
Customer : CDC

Engine : 6 BTA- 590 I

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 027

Opening
Pressure> bar: 250.00...253.00

Perforated-plate
diameter> mm: 0,5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: 0,3
> (from BDC): +0,02(0,04)

Start of delivery block
Piston stroke mm: 1,85
> mm: +0,02(0,06)
Outlet > : D

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

K20

Speed 1/min: 900
Charge press. hPa: 1000
Setting value mm: 1.00...1.40
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 900
Charge press hPa: 1000
Setting value bar: 4.10...4.70
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 750
Charge press. hPa: 1000
Del. quantity cm³/
> 1000S.: 91.50...92.50
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 4.0
> 1000S.: (4.5)

Full-load del. w/out charge press.:

Speed 1/min: 500
Del. quantity cm³/
> 1000S.: 43.50...44.50
Shutoff
electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 375
Del. quantity cm³/
> 1000S.: 15.00...21.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 5.5
> 1000S.: (7.0)

Full-load speed regulation

Speed 1/min: 1160
Charge press hPa: 1000
Del. quantity cm³/
> 1000S.: 61.00...67.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm³/: 65.00...105.00
mind> 1000S.: 65.00
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1100
Charge press hPa: 1000
TD travel mm: 1.70...2.50
> mm: (1.40...2.80)

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 900
Charge press hPa: 1000
TD travel mm: 1.00...1.40
> mm: (0.50...1.90)

Shutoff
electromagnet>Volt: 12
4th speed 1/min: 750
Charge press hPa: 1000
TD travel mm: 0.10...0.90
> mm: (0.00...1.20)

Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 500
Charge press. hPa: 1000
Supply-pump
pressure> bar: 2.40...3.00

Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 900
Charge press. hPa: 1000
Supply-pump
pressure> bar: 4.10...4.70

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1100
Charge press. hPa: 1000
Supply-pump
pressure> bar: 5.00...5.60

Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Overflow : 41.00...83.00
quantity> cm³/10s: (26.00...98.00)

2nd speed 1/min: 1100
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Overflow : 55.00...139.00
quantity> cm³/10s: (40.00...154.00)

Delivery-quant. and breakaway char.:

1st speed 1/min: 700*
Charge-air pressure-setting
point> hPa: 550
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 76.50...77.50
> 1000s.: (73.00...81.00)

2nd speed 1/min: 1270
Charge press. hPa: 1000
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 0.00...3.00
> 1000s.: (0.00...3.00)

3rd speed 1/min: 1180
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 15.00...55.00
> 1000s.: (15.00...55.00)

5th speed 1/min: 1160
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 61.00...67.00
> 1000s.: (58.00...70.00)

9th speed 1/min: 1100
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 77.50...80.50
> 1000s.: (76.00...82.00)

10th speed 1/min: 900
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 82.00...86.00
> 1000s.: (80.50...87.50)

12th speed 1/min: 750
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 91.50...92.50
> 1000s.: (89.00...95.00)

18th speed 1/min: 500
Charge press. hPa: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 43.50...44.50
> 1000s.: (40.00...48.00)

Mech. shutoff:

1st speed 1/min: 1100
Charge press. hPa: 1000
Del. quantity cm³/: 0.0...3.0
> 1000s.: (0.0...3.0)

: C.D.C # 391 6942

:

Operate control lever after each manifold-pressure compensator pressure change.

* Correction at adjusting nut

Ya = Distance between VE flange and speed-control lever in idle position

Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Permissible port/port scatter with stop test, mechanical = max. 5.0 ccm/1000 S.

Electr. shutoff:

1st speed 1/min: 375
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Idle delivery:

1st speed 1/min: 375
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 15.00...21.00
> 1000S.: (13.00...23.00)
Dispersion cm³/: 5.5
> 1000S.: (7.0)
2nd speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 0.00...4.00
> 1000S.: (0.00...4.00)

Automatic starting fuel delivery:

1st speed 1/min: 250
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 65.00...115.00
> 1000S.: (65.00...115.00)
2nd speed 1/min: 350
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 30.00...70.00
> 1000S.: (30.00...70.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 65.00...105.00
> 1000S.: (65.00...105.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K mm: -
KF mm: 5.0...5.4
MS1 mm: 1.34-1.59
Ya mm: 34.8...38.8
Yb mm: 45.8...51.2

Remarks:

K22

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : PER
Edition : 31.01.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE6/12F1250R556-1
Type number : 0 460 426 241
Customer Part-No. :

Customer-specific information
Customer : PERKINS

Engine : Q20 PHASER 195TI

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 027

Opening
Pressure> bar: 250.00...253.00

Perforated-plate
diameter> mm: 0,5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery block
Piston stroke mm: 1,25
> mm: +0,02(0,06)
Outlet > : C

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 900
Charge press. hPa: 1500
Setting value mm: 1.70...1.90

Shutoff
electromagnet>Volt: 24

Supply-pump pressure

Speed 1/min: 900
Charge press hPa: 1500
Setting value bar: 7.20...7.80
Shutoff
electromagnet>Volt: 24

Full-load del. with charge press.:

Speed 1/min: 900
Charge press. hPa: 1500
Del. quantity cm3/
> 1000S.: 91.00...92.00
Shutoff
electromagnet>Volt: 24
Dispersion cm3/
> 1000S.: (5.0)

Full-load del. w/out charge press.:

Speed 1/min: 500
Del. quantity cm3/
> 1000S.: 60.00...61.00
Shutoff
electromagnet>Volt: 24

Low-idle speed regulation

Speed 1/min: 280
Del. quantity cm3/
> 1000S.: 11.00...15.00
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/
> 1000S.: (6.5)

Full-load speed regulation

Speed 1/min: 1400
Charge press hPa: 1500
Del. quantity cm3/
> 1000S.: 42.00...48.00
Shutoff
electromagnet>Volt: 24

Start:

Speed 1/min: 100
Del. quantity cm3/: 130.00...190.00
mind> 1000S.: 130.0
Shutoff
electromagnet>Volt: 24

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1250
Charge press hPa: 1500
TD travel mm: 2.90...3.70
> mm: (2.90...3.70)
electromagnet>Volt: 24
2nd speed 1/min: 1000
Charge press hPa: 1500
TD travel mm: 2.40...3.00
> mm: (2.00...3.40)
Shutoff
electromagnet>Volt: 24
3rd speed 1/min: 900
Charge press hPa: 1500
TD travel mm: 1.70...1.90
> mm: (1.20...2.40)
Shutoff
electromagnet>Volt: 24
4th speed 1/min: 800
Charge press hPa: 1500
TD travel mm: 0.50...1.10
> mm: (0.10...1.50)
Shutoff
electromagnet>Volt: 24

Supply-pump pressure characteristic:

1st speed 1/min: 700
Charge press. hPa: 1500
Supply-pump pressure> bar: 6.10...6.70
Shutoff
electromagnet>Volt: 24
2nd speed 1/min: 900
Charge press. hPa: 1500
Supply-pump pressure> bar: 7.20...7.80
Shutoff
electromagnet>Volt: 24
3rd speed 1/min: 1250
Charge press. hPa: 1500
Supply-pump pressure> bar: 8.20...8.80
Shutoff
electromagnet>Volt: 24

Overflow quantity at overflow valve:

1st speed 1/min: 500
Charge press. hPa: -
Shutoff
electromagnet>Volt: 24
Overflow quantity> cm3/10s: 41.00...86.00
(26.00...98.00)
2nd speed 1/min: 1100
Charge press. hPa: 1500
Shutoff
electromagnet>Volt: 24
Overflow : 55.00...139.00

quantity> cm3/10s: (40.00...154.00)

Delivery-quant. and breakaway char.:

1st speed 1/min: 700*
Charge-air pressure-setting point> hPa: 700
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 83.50...84.50
> 1000S.: (80.50...87.50)
2nd speed 1/min: 1480
Charge press. hPa: 1500
Shutoff
electromagnet Volt: 24
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)
3rd speed 1/min: 1350
Charge press. hPa: 1500
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 65.00...95.00
> 1000S.: (65.00...95.00)
5th speed 1/min: 1400
Charge press. hPa: 1500
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 42.00...48.00
> 1000S.: (39.00...51.00)
9th speed 1/min: 1250
Charge press. hPa: 1500
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 90.50...95.50
> 1000S.: (89.50...96.50)
10th speed 1/min: 700
Charge press. hPa: 1500
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 89.00...95.00
> 1000S.: (88.00...96.00)
12th speed 1/min: 900
Charge press. hPa: 1500
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 91.00...92.00
> 1000S.: (88.00...95.00)
18th speed 1/min: 500
Charge press. hPa: -
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 60.00...61.00
> 1000S.: (57.00...64.00)

Mech. shutoff:

1st speed 1/min: 1250
Charge press. hPa: 1500

Del. quantity cm³/: 0.0...3.0
> 1000S.: (0.0...3.0)
Shutoff
electromagnet>volt: 24

Electr. shutoff:

1st speed 1/min: 280
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Idle delivery:

1st speed 1/min: 280
Shutoff
electromagnet>Volt: 24
Del. quantity cm³/: 11.00...15.00
> 1000S.: (7.00...19.00)
Dispersion cm³/: 6.5
> 1000S.: (6.5)
2nd speed 1/min: 400
Shutoff
electromagnet>Volt: 24
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)

Automatic starting fuel delivery:

1st speed 1/min: 130
Shutoff
electromagnet>Volt: 24
Del. quantity cm³/: 130.00...190.00
> 1000S.: (130.00...190.00)

2nd speed 1/min: 230
Shutoff
electromagnet>Volt: 24
Del. quantity cm³/: 40.00...80.00
> 1000S.: (40.00...80.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 24
Del. quantity cm³/: 130.00...190.00
> 1000S.: (130.00...190.00)

Shutoff electromagnet:

Cut-in
>min voltage : 20,0
Rated voltage : 24,0

Mounting and assembly dimensions:

Designation
K mm: 3.6...3.8
KF mm: KOT
MS1 mm: 1.21-1.46

K25

Ya mm: 37.2...39.2
Yb mm: 44.9...53.5

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

* Correction at adjusting nut

Ya = Distance between VE flange and speed-control lever in idle position
Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA
Edition : 01.02.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE6/12F1350R623
Type number : 0 460 426 242
Customer Part-No. :

Customer-specific information
Customer : IVECO-FIAT

Engine : 8060.45B.5100 (DI)

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 54.00...56.00
Electronically> : -

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 027

Opening
Pressure> bar: 250.00...253.00

Perforated-plate
diameter> mm: 0,5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery block
Piston stroke mm: 1,00
> mm: +0,02(0,06)
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000
Charge press. hPa: 1000
Setting value mm: 1.90...2.10

AFB/AFB
valve > Volt: 24
Shutoff
electromagnet>Volt: 24

Supply-pump pressure

Speed 1/min: 1000
Charge press hPa: 1000
Setting value bar: 7.20...7.80
KSB/AFB
valve > Volt: 24
Shutoff
electromagnet>Volt: 24

Full-load del. with charge press.:

Speed 1/min: 700
Charge press. hPa: 1000
Del. quantity cm³/
> 1000S.: 74.50...81.50

KSB/AFB
valve > Volt: 24
Shutoff
electromagnet>Volt: 24
Dispersion cm³/: 3.5
> 1000S.: (5.0)

Full-load del. w/out charge press.:

Speed 1/min: 500
Del. quantity cm³/
> 1000S.: 55.00...62.00
KSB/AFB
valve > Volt: 24
Shutoff
electromagnet>Volt: 24

11

Low-idle speed regulation

Speed 1/min: 350
Del. quantity cm³/
> 1000S.: 11.00...21.00

KSB/AFB
valve > Volt: 24
Shutoff
electromagnet>Volt: 24
Del. quantity cm³/: 5.0
> 1000S.: (5.0)

Full-load speed regulation

Speed 1/min: 1500
Charge press hPa: 1000
Del. quantity cm³/
> 1000S.: 37.00...43.00
KSB/AFB
valve > Volt: 24
Shutoff
electromagnet>Volt: 24

Start:

Speed 1/min: 100
Del. quantity cm³/: 60.00...110.00
mind> 1000S.: 60.00
KSB/AFB
Valve > Volt: 24
Shutoff
electromagnet>Volt: 24

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1100
Charge press hPa: 1000
TD travel mm: 2.80...3.40
> mm: (2.40...3.80)
KSB/AFB
valve > Volt: 24
Shutoff
electromagnet>Volt: 24
3rd speed 1/min: 1000
Charge press hPa: 1000
TD travel mm: 1.90...2.10
> mm: (1.30...2.70)
KSB/AFB
valve > Volt: 24
Shutoff
electromagnet>Volt: 24
4th speed 1/min: 900
Charge press hPa: 1000
TD travel mm: 0.50...1.10
> mm: (0.10...1.50)
KSB/AFB
valve > Volt: 24
Shutoff
electromagnet>Volt: 24
5th speed 1/min: 450
Charge press. hPa: 1000
TD travel mm: 3.50...4.70 B
> mm: (3.40...3.80) B
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 24
6th speed 1/min: 320
Charge press. hPa: 1000
TD travel mm: 1.80...2.20 A
> mm: (0.80...3.20) A
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 24

Supply-pump pressure characteristic:

1st speed 1/min: 600

K27

Charge press. hPa: 1000
Supply-pump
pressure> bar: 4.80...5.40
KSB/AFB
valve > Volt: 24
Shutoff

electromagnet>Volt: 24
2nd speed 1/min: 1000
Charge press. hPa: 1000
Supply-pump
pressure> bar: 7.20...7.80
KSB/AFB

valve > Volt: 24
Shutoff
electromagnet>Volt: 24
3rd speed 1/min: 1350
Charge press. hPa: 1000
Supply-pump
pressure> bar: 9.10...9.70
KSB/AFB

valve > Volt: 24
Shutoff
electromagnet>Volt: 24
4th speed 1/min: 450
Charge press. hPa: 1000
Supply-pump
pressure> bar: 7.00...8.60 B
KSB/AFB

valve > Volt: -
Shutoff
electromagnet>Volt: 24

Overflow quantity at overflow valve:

1st speed 1/min: 600
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 24
Shutoff

electromagnet>Volt: 24
Overflow : 41.00...86.00
quantity> cm³/10s: (26.00...98.00)
2nd speed 1/min: 1350
Charge press. hPa: 1000
KSB/AFB

valve > Volt: 24
Shutoff
electromagnet>Volt: 24
Overflow : 55.00...139.00
quantity> cm³/10s: (40.00...154.00)

Delivery-quant. and breakaway char.:

1st speed 1/min: 600*
Charge-air pressure-setting
point> hPa: 300
KSB/AFB
valve > Volt: 24
Shutoff

electromagnet>Volt: 24
 Del. quantity cm3/: 76.50...77.50
 > 1000S.: (73.00...81.00)
 2nd speed 1/min: 1600
 Charge press. hPa: 1000
 KSB/AFB
 valve > Volt: 24
 Shutoff
 electromagnet Volt: 24
 Del. quantity cm3/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 3rd speed 1/min: 1450
 Charge press. hPa: 1000
 KSB/AFB
 valve > Volt: 24
 Shutoff
 electromagnet>Volt: 24
 Del. quantity cm3/: 50.00...66.00
 > 1000S.: (48.00...68.00)
 5th speed 1/min: 1500
 Charge press. hPa: 1000
 KSB/AFB
 valve > Volt: 24
 Shutoff
 electromagnet>Volt: 24
 Del. quantity cm3/: 37.00...43.00
 > 1000S.: (34.00...46.00)
 6th speed 1/min: 1000
 Charge press. hPa: 1000
 KSB/AFB
 valve > Volt: 24
 Shutoff
 electromagnet>Volt: 24
 Del. quantity cm3/: 72.50...76.50
 > 1000S.: (71.00...78.00)
 7th speed 1/min: 600
 Charge press. hPa: 1000
 KSB/AFB
 valve > Volt: 24
 Shutoff
 electromagnet>Volt: 24
 Del. quantity cm3/: 78.50...82.50
 > 1000S.: (77.00...84.00)
 8th speed 1/min: 1350
 Charge press. hPa: 1000
 KSB/AFB
 valve > Volt: 24
 Shutoff
 electromagnet>Volt: 24
 Del. quantity cm3/: 70.00...73.00
 > 1000S.: (68.00...75.00)
 9th speed 1/min: 700
 Charge press. hPa: 1000
 KSB/AFB
 valve > Volt: 24
 Shutoff
 electromagnet>Volt: 24
 Del. quantity cm3/: 77.50...78.50
 > 1000S.: (74.50...81.50)
 10th speed 1/min: 500

Charge press. hPa: -
 KSB/AFB
 valve > Volt: 24
 Shutoff
 electromagnet>Volt: 24
 Del. quantity cm3/: 58.00...59.00
 > 1000S.: (55.00...62.00)

Mech. shutoff:
 1st speed 1/min: 1350
 Charge press. hPa: 1000
 Del. quantity cm3/: 0.0...3.0
 > 1000S.: (0.0...3.0)
 Shutoff
 electromagnet>volt: 24

Electr. shutoff:
 1st speed 1/min: 350
 Del. quantity cm3/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 Shutoff
 electromagnet>volt: -

Idle delivery:
 1st speed 1/min: 350
 >KSB/AFB
 valve > Volt: 24
 Shutoff
 electromagnet>Volt: 24
 Del. quantity cm3/: 14.00...18.00
 > 1000S.: (11.00...21.00)
 Dispersion cm3/: 5.0
 > 1000S.: (5.0)
 2nd speed 1/min: 425
 KSB/AFB
 valve > Volt: 24
 Shutoff
 electromagnet>Volt: 24
 Del. quantity cm3/: 0.00...3.00
 > 1000S.: (0.00...3.00)

Automatic starting fuel delivery:
 1st speed 1/min: 130
 KSB/AFB
 valve > Volt: 24
 Shutoff
 electromagnet>Volt: 24
 Del. quantity cm3/: 60.00...110.00
 > 1000S.: (60.00...110.00)
 2nd speed 1/min: 250
 KSB/AFB
 valve > Volt: 24
 Shutoff
 electromagnet>Volt: 24

Del. quantity cm³/: 33.00...67.00
> 1000S.: (33.00...67.00)

4th speed 1/min: 100

KSB/AFB

valve > Volt: 24

Shutoff

electromagnet>Volt: 24

Del. quantity cm³/: 60.00...110.00
> 1000S.: (60.00...110.00)

Shutoff electromagnet:

Cut-in

>min voltage : 20,0

Rated voltage : 24,0

Mounting and assembly dimensions:

Designation

K mm: 3.5...3.7

KF mm: KOT

MS1 mm: 1.46-1.71

Ya mm: 37.9...39.9

Yb mm: 43.1...48.3

Remarks:

:
:

Operate control lever after each manifold-pressure compensator pressure change.

* Correction at adjusting nut

Ya = Distance between VE flange and speed-control lever in idle position

Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control lever on distributor-head end

A = KSB adjustment point

B = KSB curve point

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CDC
Edition : 01.02.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE6/12F1100R620
Type number : 0 460 426 243
Customer Part-No. :

Customer-specific information
Customer : CDC

Engine : 6T 590

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 027

Opening
Pressure> bar: 250.00...253.00

Perforated-plate
diameter> mm: 0,5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery
Prestroke mm: 0,3
> (from BDC): $\pm 0,02(0,04)$

Start of delivery block
Piston stroke mm: 1,50
> mm: $\pm 0,02(0,06)$
Outlet > : D

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

L02

Speed 1/min: 750
Setting value mm: 3.80...4.60
Shutoff
electromagnet>Volt: 24

Supply-pump pressure

Speed 1/min: 750
Setting value bar: 5.40...6.00
Shutoff
electromagnet>Volt: 24

Full-load del. w/out charge press.:

Speed 1/min: 900
Del. quantity cm³/
> 1000S.: 62.00...63.00
Shutoff
electromagnet>Volt: 24

Low-idle speed regulation

Speed 1/min: 450
Del. quantity cm³/
> 1000S.: 5.00...11.00
Shutoff
electromagnet>Volt: 24
Del. quantity cm³/: 5.5
> 1000S.: (7.0)

Full-load speed regulation

Speed 1/min: 1140
Del. quantity cm³/
> 1000S.: 50.00...56.00
Shutoff
electromagnet>Volt: 24

Start:

Speed 1/min: 100
Del. quantity cm³/: 55.00...115.00
mind> 1000S.: 55.00
Shutoff
electromagnet>Volt: 24

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1000
TD travel mm: 3.80...4.60
> mm: (3.50...4.90)
Shutoff
electromagnet>Volt: 24
3rd speed 1/min: 750
TD travel mm: 2.40...2.80
> mm: (1.90...3.30)

Shutoff
electromagnet>Volt: 24

Supply-pump pressure characteristic:

1st speed 1/min: 400
Supply-pump pressure> bar: 3.90...4.50
Shutoff
electromagnet>Volt: 24
2nd speed 1/min: 750
Supply-pump pressure> bar: 5.40...6.00
Shutoff
electromagnet>Volt: 24
3rd speed 1/min: 1000
Supply-pump pressure> bar: 6.40...7.00
Shutoff
electromagnet>Volt: 24

Overflow quantity at overflow valve:

1st speed 1/min: 400
Shutoff
electromagnet>Volt: 24
Overflow quantity> cm3/10s: (41.00...86.00)
2nd speed 1/min: 1100
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 24
Overflow quantity> cm3/10s: (55.00...139.00)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1220
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 0.00...0.30
> 1000S.: (0.00...0.30)
2nd speed 1/min: 1175
Shutoff
electromagnet Volt: 24
Del. quantity cm3/: 23.00...53.00
> 1000S.: (23.00...53.00)
3rd speed 1/min: 1140
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 50.00...56.00
> 1000S.: (47.00...59.00)
4th speed 1/min: 1100
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 60.50...63.50
> 1000S.: (59.00...65.00)
5th speed 1/min: 900
Shutoff

electromagnet>Volt: 24
Del. quantity cm3/: 62.00...62.00
> 1000S.: (59.50...65.50)
6th speed 1/min: 750
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 57.00...61.00
> 1000S.: (55.00...63.00)
7th speed 1/min: 700
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 55.00...59.00
> 1000S.: (53.00...61.00)
8th speed 1/min: 400
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 16.50...24.50
> 1000S.: (14.50...26.50)

Electr. shutoff:

1st speed 1/min: 500
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Idle delivery:

1st speed 1/min: 450
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 5.00...11.00
> 1000S.: (3.00...13.00)
Dispersion cm3/: 5.5
> 1000S.: (7.0)
2nd speed 1/min: 500
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)

Automatic starting fuel delivery:

1st speed 1/min: 240
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 5.00...35.00
> 1000S.: (5.00...35.00)
2nd speed 1/min: 180
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 55.00...115.00
> 1000S.: (55.00...115.00)
4th speed 1/min: 100
Shutoff

electromagnet>Volt: 24
Del. quantity cm³/: 55.00...115.00
> 1000s.: (55.00...115.00)

Shutoff electromagnet:

Cut-in
>min voltage : 20,0
Rated voltage : 24,0

Mounting and assembly dimensions:

KF mm: 5.0...5.4
MS1 mm: 1.43-1.68
Ya mm: 34.8...38.8
Yb mm: 38.9...44.1

Remarks:

:
:

Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Permissible port/port scatter with
stop test, mechanical = max. 5.0
ccm/1000 S.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CDC
Edition : 02.02.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE6/12F1250R498-3
Type number : 0 460 426 244
Customer Part-No. :

Customer-specific information
Customer : CDC

Engine : 6 BT 5.9B

Power KW: 107
Speed 1/min: 2500

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 109

Opening
Pressure> bar: 207.00...210.00

Perforated-plate
diameter> mm: 0,5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery block
Piston stroke mm: 1,20
> mm: ±0,02(0,06)
Outlet > : D

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000
Charge press. hPa: 1000
Setting value mm: 1.90...2.30
Shutoff
electromagnet>Volt: 24

Supply-pump pressure

Speed 1/min: 1000
Charge press hPa: 1000
Setting value bar: 6.30...6.90
Shutoff
electromagnet>Volt: 24

Full-load del. with charge press.:

Speed 1/min: 850
Charge press. hPa: 1000
Del. quantity cm3/
> 1000S.: 84.50...85.50
Shutoff
electromagnet>Volt: 24
Dispersion cm3/: 5.0
> 1000S.: (5.0)

Full-load del. w/out charge press.:

Speed 1/min: 500
Del. quantity cm3/
> 1000S.: 60.50...61.50
Shutoff
electromagnet>Volt: 24

Low-idle speed regulation

Speed 1/min: 350
Del. quantity cm3/
> 1000S.: 11.00...15.00
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 5.5
> 1000S.: (7.0)

Full-load speed regulation

Speed 1/min: 1350
Charge press hPa: 1000
Del. quantity cm3/
> 1000S.: 51.00...57.00
Shutoff
electromagnet>Volt: 24

Start:

Speed 1/min: 100
Del. quantity cm3/: 65.00...95.00
mind> 1000S.: 65.00
Shutoff
electromagnet>Volt: 24

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1250
Charge press hPa: 1000
TD travel mm: 2.20...3.00
> mm: (1.90...3.30)
KSB/AFB valve > Volt: -
Shutoff electromagnet>Volt: 24
3rd speed 1/min: 1000
Charge press hPa: 1000
TD travel mm: 1.90...2.30
> mm: (1.40...2.80)
KSB/AFB valve > Volt: -
Shutoff electromagnet>Volt: 24
4th speed 1/min: 850
Charge press hPa: 1000
TD travel mm: 0.60...1.40
> mm: (0.30...1.70)
KSB/AFB valve > Volt: -
Shutoff electromagnet>Volt: 24
5th speed 1/min: 450
Charge press. hPa: -
TD travel mm: 2.00...3.00
> mm: (1.80...3.20)
KSB/AFB valve > Volt: 24
Shutoff electromagnet>Volt: 24

Supply-pump pressure characteristic:

1st speed 1/min: 500
Charge press. hPa: 1000
Supply-pump pressure> bar: 3.90...4.50
Shutoff electromagnet>Volt: 24
2nd speed 1/min: 850
Charge press. hPa: 1000
Supply-pump pressure> bar: 5.70...6.30
Shutoff electromagnet>Volt: 24
3rd speed 1/min: 1000
Charge press. hPa: 1000
Supply-pump pressure> bar: 6.30...6.90
Shutoff electromagnet>Volt: 24
4th speed 1/min: 1250
Charge press. hPa: 1000

Supply-pump pressure> bar: 7.20...7.80
Shutoff electromagnet>Volt: 24

Overflow quantity at overflow valve:

1st speed 1/min: 500
Charge press. hPa: -
Shutoff electromagnet>Volt: 24
Overflow : 41.00...86.00
quantity> cm³/10s: (26.00...98.00)
2nd speed 1/min: 1250
Charge press. hPa: 1000
Shutoff electromagnet>Volt: 24
Overflow : 55.00...139.00
quantity> cm³/10s: (40.00...154.00)

Delivery-quant. and breakaway char.:

1st speed 1/min: 650*
Charge-air pressure-setting point> hPa: 450
Shutoff electromagnet>Volt: 24
Del. quantity cm³/: 71.50...72.50
> 1000S.: (68.00...76.00)
2nd speed 1/min: 1480
Charge press. hPa: 1000
Shutoff electromagnet Volt: 24
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
3rd speed 1/min: 1425
Charge press. hPa: 1000
Shutoff electromagnet>Volt: 24
Del. quantity cm³/: 10.00...40.00
> 1000S.: (10.00...40.00)
5th speed 1/min: 1350
Charge press. hPa: 1000
Shutoff electromagnet>Volt: 24
Del. quantity cm³/: 51.00...57.00
> 1000S.: (48.00...60.00)
9th speed 1/min: 1100
Charge press. hPa: 1000
Shutoff electromagnet>Volt: 24
Del. quantity cm³/: 82.50...85.50
> 1000S.: (80.50...87.50)
10th speed 1/min: 1250
Charge press. hPa: 1000
Shutoff electromagnet>Volt: 24
Del. quantity cm³/: 80.00...84.00
> 1000S.: (79.00...85.00)

12th speed 1/min: 850
Charge press. hPa: 1000
Shutoff
electromagnet>Volt: 24
Del. quantity cm³/: 84.50...85.50
> 1000S.: (82.00...98.00)
18th speed 1/min: 500
Charge press. hPa: -
Shutoff
electromagnet>Volt: 24
Del. quantity cm³/: 60.50...61.50
> 1000S.: (57.00...65.00)

Mech. shutoff:

1st speed 1/min: 1250
Charge press. hPa: 1000
Del. quantity cm³/: 0.0...3.0
> 1000S.: (0.0...3.0)
Shutoff
electromagnet>volt: 24

Electr. shutoff:

1st speed 1/min: 350
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Idle delivery:

1st speed 1/min: 350
Shutoff
electromagnet>Volt: 24
Del. quantity cm³/: 11.00...15.00
> 1000S.: (6.00...20.00)
Dispersion cm³/: 5.5
> 1000S.: (7.0)
2nd speed 1/min: 410
Shutoff
electromagnet>Volt: 24
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)

Automatic starting fuel delivery:

1st speed 1/min: 200
Shutoff
electromagnet>Volt: 24
Del. quantity cm³/: 60.00...90.00
> 1000S.: (60.00...90.00)
2nd speed 1/min: 130
Shutoff
electromagnet>Volt: 24
Del. quantity cm³/: 75.00...115.00
> 1000S.: (75.00...115.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 24
Del. quantity cm³/: 65.00...95.00
> 1000S.: (65.00...95.00)

Shutoff electromagnet:

Cut-in
>min voltage : 20,0
Rated voltage : 24,0

Mounting and assembly dimensions:

Designation
K mm: 3.6...3.8
KF mm: KOT
MS1 mm: 1.21-1.46
Ya mm: 34.8...38.8
Yb mm: 43.6...48.8

Remarks:

:
:
Operate control lever after each manifold-pressure compensator pressure change.

* Correction at adjusting nut

Ya = Distance between VE flange and speed-control lever in idle position
Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Permissible port/port scatter with stop test, mechanical = max. 5.0 ccm/1000 S.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : PEU
Edition : 02.02.95
replaces : -
Calibrating oil : ISO-4113
Injection pump : VE4/8F2300R425-6
Type number : 0 460 484 070
Customer Part-No. :

Customer-specific information
Customer : PSA

Engine : XUD9AY / L3

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery

Indicator setting
Piston stroke> mm: 0.3
Outlet> : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250
Setting value mm: 3.30...3.70
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250

L08

Setting value bar: 5.70...6.30
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250
Del. quantity cm3/
> 1000S.: 29.70...30.70
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 2.0
> 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 500
Del. quantity cm3/
> 1000S.: 4.50...5.50
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2650
Del. quantity cm3/
> 1000S.: 9.00...13.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/: 46.00...48.00
mind> 1000S.: 39.50
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1250
Inj.-qty. cm3/
difference> 1000S.: -4.0...-10.00 #
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1250
TD-travel
difference> mm: -0.9...-1.1 #
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2000

TD travel mm: 7.20...8.00
> mm: (6.90...8.30)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1250
TD travel mm: 3.30...3.70
> mm: (2.80...4.20)
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 800
TD travel mm: 0.40...1.20
> mm: (0.10...1.50)
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump
pressure> bar: 3.30...3.90
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250
Supply-pump
pressure> bar: 5.70...6.30
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 2200
Supply-pump
pressure> bar: 8.20...8.80
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Overflow : 41.00...83.00
quantity> cm3/10s: (26.00...91.00)
2nd speed 1/min: 2200
Shutoff
electromagnet>Volt: 12
Overflow : 55.00...139.00
quantity> cm3/10s: (40.70...154.00)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2900
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)
5th speed 1/min: 2650
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 9.00...13.00
> 1000S.: (7.00...15.00)
8th speed 1/min: 2500

Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 19.50...25.50
> 1000S.: (17.50...27.50)
9th speed 1/min: 2200
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 32.00...34.00
> 1000S.: (30.80...35.20)
12th speed 1/min: 1250
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 29.70...30.70
> 1000S.: (28.00...32.40)
13th speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 29.80...32.80
> 1000S.: (28.30...34.30)

Delivery-quant. and breakaway char.:

Inj.-qty.values,temp.-compensated

12th speed 1/min: 1250
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 29.70...30.70
> 1000S.: (28.00...32.40)
20th speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 29.80...32.80
> 1000S.: (28.30...34.30)

Electr. shutoff:

1st speed 1/min: 400
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 400
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 12.00...14.00
> 1000S.: (9.00...17.00)

High Idle:

1st speed 1/mi: 475
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 8.50...10.50
> 1000S.: (5.50...13.50)

Rest delivery:

1st speed 1/min: 500
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 4.50...5.50
> 1000S.: (3.00...7.00)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1250
Inj.-qty. cm3/ : -4.0...10.0 #
difference> 1000S.: (-4.0...10.0) #
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250
Inj.-qty. cm3/ : -5.0...-7.0 #
difference> 1000S.: (-3.0...-9.0) #
Shutoff
electromagnet Volt: 12
3rd speed 1/min: 1250
Inj.-qty. cm3/ : +2.0...+8.0 *
difference> 1000S.: (+2.0...+8.0) *
Shutoff
electromagnet>Volt: 12

TD-travel dif.measurement:

correttore anticipo iniezione (SV):
1st speed 1/min: 1250
TD-travel : -0.9...-1.1 #
difference> mm: (-0.9...-1.1) #
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250
TD-travel : -2.7...-3.7 *
difference> mm: (-2.6...-3.8) *
Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:

pompa di mandata (FP):
1st speed 1/min: 1250
Supply pump-
pressure > : -0.1...-0.3 #
difference> bar: (-0.1...-0.3) #
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250
Supply pump-
pressure > : -1.2...-1.8 *
difference> bar: (-1.1...-1.9) *
Shutoff

electromagnet>Volt: 12

Part-load del.at 3rd inj.-qty.
terza fermo della portata
stop (EGR set)
scarico) (ARF)
gaz d'échappement-ARF)
Spacing mm: 12.0

1st speed 1/min: 1000
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 13.50...15.50
> 1000S.: (10.50...18.50)

Automatic starting fuel delivery:

1st speed 1/min: 225
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 37.00...71.00
> 1000S.: (37.00...71.00)

2nd speed 1/min: 350
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 20.00...40.00
> 1000S.: (20.00...40.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 46.00...48.00
> 1000S.: (39.50...54.50)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.6...3.8
KF	mm: KOT
MS	mm: 1.3...1.5
Ya	mm: 27.8...31.8
Yb	mm: 74.0...85.0

Remarks:

: MIKROSCHALTER: MAß A
: 0,8...3,0 MM

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VW
Edition : 02.02.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/8F2200R574
Type number : 0 460 484 071
Customer Part-No. :

Customer-specific information
Customer : VW

Engine : 1.9L SD EMK

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 111

Opening
Pressure> bar: 147.00...150.00

Perforated-plate
diameter> mm: 0.6

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery block
Piston stroke mm: 0.9
> mm: +0.02(0.05)
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250
Setting value mm: 5.10...5.50
AFB/AFB

valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250
Setting value bar: 5.40...6.00
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250
Del. quantity cm3/
> 1000S.: 33.00...34.00 11
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 2.0
> 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 525
Del. quantity cm3/
> 1000S.: 6.00...8.00
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2525
Del. quantity cm3/
> 1000S.: 8.50...12.50
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/: 40.00...66.00
mind> 1000S.: 40.00
KSB/AFB
Valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2000
 TD travel mm: 7.50...8.30
 > mm: (7.20...8.60)
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 1250
 TD travel mm: 5.10...5.50
 > mm: (4.60...6.00)
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 4th speed 1/min: 750
 TD travel mm: 3.10...3.90
 > mm: (2.80...4.20)
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 5th speed 1/min: 2000
 TD travel mm: 0.90...1.70
 > mm: (1.00...2.00)
 KSB/AFB
 valve > Volt: 12
 Timing valve Volt: 12 !
 Shutoff
 electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2000
 Supply-pump
 pressure> bar: 7.30...7.90
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1250
 Supply-pump
 pressure> bar: 5.40...6.00
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 750
 Supply-pump
 pressure> bar: 4.00...4.60
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 750
 KSB/AFB
 valve > Volt: 12
 Shutoff

electromagnet>Volt: 12
 Overflow : 41.00...83.00
 quantity> cm3/10s: (26.00...98.00)
 2nd speed 1/min: 2200
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Overflow : 55.00...139.00
 quantity> cm3/10s: (40.00...154.00)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2675
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm3/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 5th speed 1/min: 2525
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 8.50...12.50
 > 1000S.: (6.50...14.50)
 8th speed 1/min: 2400
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 22.00...32.00
 > 1000S.: (21.00...33.00)
 9th speed 1/min: 2200
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 34.00...36.00
 > 1000S.: (32.80...37.20)
 12th speed 1/min: 1250
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 33.00...34.00
 > 1000S.: (31.30...35.70)
 17th speed 1/min: 1250
 KSB solenoid-operated
 valve > volt: - !
 Shutoff
 electromagnet>volt: 12
 Del. quantity cm3/: 29.70...30.70
 > 1000H.: (28.00...32.40)
 20th speed 1/min: 750
 KSB/AFB
 valve > Volt: 12
 Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 32.50...35.50
> 1000S.: (31.00...37.00)
21th speed 1/min: 400
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 34.50...40.50
> 1000S.: (32.00...43.00)

Electr. shutoff:

1st speed 1/min: 450
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 450
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 8.50...10.50
> 1000S.: (5.50...13.50)

High Idle:

1st speed 1/mi: 525
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 8.50...10.50
> 1000S.: (5.50...13.50)

Rest delivery:

1st speed 1/min: 550
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 6.00...8.00
> 1000S.: (3.00...11.00)

Automatic starting fuel delivery:

1st speed 1/min: 180
KSB/AFB
valve > Volt: 12

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Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 40.00...74.00
> 1000S.: (40.00...74.00)
4th speed 1/min: 100
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 40.00...66.00
> 1000S.: (40.00...66.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.2...3.4
KF	mm: 5.72
MS	mm: 1.1...1.5
Ya	mm: 36.0...40.0
Yb	mm: 47.7...57.3

Remarks:

:
:
Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

Permissible port/port scatter with
stop test, electrical = max. 5.0
ccm/1000 S.

On initial measurement, screw in
residual-quantity adjusting screw 2 mm.

Following pump adjustment, screw out
residual-quantity adjusting screw 2 mm.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWV
Edition : 03.02.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/8F2200R606
Type number : 0 460 484 077
Customer Part-No. :

Customer-specific information
Customer : VW

Engine : 1.9l SD Ecomatic

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 111

Opening
Pressure> bar: 147.00...150.00

Perforated-plate
diameter> mm: 0.6

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery block
Piston stroke mm: 1.00
> mm: +0.02(0.05)
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250
Setting value mm: 5.10...5.50
AFB/AFB

valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250
Setting value bar: 5.40...6.00
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250
Del. quantity cm³/
> 1000S.: 33.00...34.00

KSB/AFB
valve > Volt: 12

Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 2.0
> 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 525
Del. quantity cm³/
> 1000S.: 6.00...8.00

KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2525
Del. quantity cm³/
> 1000S.: 8.50...12.50

KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm³/: 40.00...66.00
mind> 1000S.: 40.00

KSB/AFB
Valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2000
 TD travel mm: 7.50...8.30
 > mm: (7.20...8.60)
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 1250
 TD travel mm: 5.10...5.50
 > mm: (4.60...6.00)
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 4th speed 1/min: 750
 TD travel mm: 3.10...3.90
 > mm: (2.80...4.20)
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 6th speed 1/min: 2000
 TD travel mm: 0.90...1.70
 > mm: (0.60...2.00)
 KSB/AFB
 valve > Volt: 12
 Timing valve Volt: 12 !
 Shutoff
 electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2000
 Supply-pump
 pressure> bar: 7.30...7.90
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1250
 Supply-pump
 pressure> bar: 5.40...6.00
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 750
 Supply-pump
 pressure> bar: 4.00...4.60
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12

Overlow quantity at overflow valve:

1st speed 1/min: 750
 KSB/AFB
 valve > Volt: 12
 Shutoff

electromagnet>Volt: 12
 Overflow : 41.70...86.18
 quantity> cm³/10s: (26.70...98.18)
 2nd speed 1/min: 2200
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Overflow : 55.60...139.00
 quantity> cm³/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2675
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm³/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 5th speed 1/min: 2525
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 8.50...12.50
 > 1000S.: (6.50...14.50)
 8th speed 1/min: 2400
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 22.00...32.00
 > 1000S.: (21.00...33.00)
 9th speed 1/min: 2200
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 34.00...36.00
 > 1000S.: (32.80...37.20)
 12th speed 1/min: 1250
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 33.00...34.00
 > 1000S.: (31.30...35.70)
 19th speed 1/min: 1250
 KSB/AFB
 valve > Volt: 12
 Timing valve Volt: 12 !
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 29.90...30.50
 > 1000S.: -
 20th speed 1/min: 750
 KSB/AFB
 valve > Volt: 12

Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 32.50...35.50
> 1000S.: (31.00...37.00)
21th speed 1/min: 400
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 32.50...35.50
> 1000S.: (31.00...37.00)

Electr. shutoff:

1st speed 1/min: 450
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 450
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 8.50...10.50
> 1000S.: (5.50...13.50)

High Idle:

1st speed 1/mi: 525
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 8.50...10.50
> 1000S.: (5.50...13.50)

Rest delivery:

1st speed 1/min: 525
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 6.00...8.00
> 1000S.: (3.00...11.00)

Automatic starting fuel delivery:

1st speed 1/min: 180
KSB/AFB

valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 40.00...74.00
> 1000S.: (40.00...74.00)
4th speed 1/min: 100
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 40.00...66.00
> 1000S.: (40.00...66.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.2...3.4
KF	mm: 5.72
MS	mm: 1.1...1.5
Ya	mm: 36.0...40.0
Yb	mm: 45.7...55.3

Ajustement Potentiometer:

Angle for
pot. > °: 10.0
Supply voltage
pot. > volt: 5.0
Output volt
pot. > volt: 0.7

Remarks:

⋮
⋮
On initial measurement, screw in
residual-quantity adjusting screw 2 mm.

Following pump adjustment, screw out
residual-quantity adjusting screw 2 mm.

Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

Permissible port/port scatter with
stop test, electrical = max. 5.0
ccm/1000 S.



BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA
Edition : 09.02.95
replaces : -
Calibrating oil : ISO-4113
Injection pump : VE4/8F2300R538-1
Type number : 0 460 484 084
Customer Part-No. :

Customer-specific information
Customer : FIAT-AUTO

Engine : M708 NT 17.L

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery block
Piston stroke mm: 1.0
> mm: ±0.02(0.04)
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500
Charge press. hPa: 1000
Setting value mm: 4.00...4.20
AFB/AFB
valve > Volt: 12
Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1500
Charge press hPa: 1000
Setting value bar: 5.20...5.80
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1500
Charge press. hPa: 1000
Del. quantity cm3/
> 1000S.: 41.00...42.00
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 2.5
> 1000S.: (2.5)

Full-load del. w/out charge press.:

Speed 1/min: 750
Del. quantity cm3/
> 1000S.: 28.00...29.00
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

11

Low-idle speed regulation

Speed 1/min: 450
Del. quantity cm3/
> 1000S.: 10.00...14.00
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 2.5
> 1000S.: (2.5)

Full-load speed regulation

Speed 1/min: 2500
Charge press hPa: 1000
Del. quantity cm3/
> 1000S.: 28.50...32.50
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm³/: 35.00...59.00
mind> 1000S.: 35.00
KSB/AFB
Valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2000
Charge press hPa: 1000
TD travel mm: 6.50...7.10
> mm: (6.20...7.40)
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1500
Charge press hPa: 1000
TD travel mm: 4.00...4.20
> mm: (3.50...4.70)
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1000
Charge press hPa: 1000
TD travel mm: 1.10...1.70
> mm: (0.80...2.00)
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
5th speed 1/min: 2300
Charge press. hPa: 1000
TD travel mm: 7.90...8.50
> mm: (7.60...8.80)
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
8th speed 1/min: 1100
Charge press. hPa: 1000
TD travel mm: 2.00...4.00 B
> mm: (1.30...4.70) B
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12
9th speed 1/min: 400
Charge press. hPa: 1000
TD travel mm: 0.50...2.50 A
> mm: (0.00...3.20) A
KSB/AFB
valve > Volt: -
Shutoff

electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2300
Charge press. hPa: 1000
Supply-pump
pressure> bar: 7.30...7.90
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1500
Charge press. hPa: 1000
Supply-pump
pressure> bar: 5.20...5.80
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1000
Charge press. hPa: 1000
Supply-pump
pressure> bar: 3.90...4.50
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 750
Charge press. hPa: -
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...86.18
quantity> cm³/10s: (26.70...98.18)
2nd speed 1/min: 2300
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.00
quantity> cm³/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

1nd speed 1/min: 1100
Charge-air pressure-setting
point> hPa: 350*
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 35.00...36.00
> 1000S.: (33.00...38.00)

2nd speed 1/min: 2900
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
3rd speed 1/min: 2700
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 4.50...12.50
> 1000S.: (3.50...13.50)
5th speed 1/min: 2500
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 28.50...32.50
> 1000S.: (25.50...35.50)
9th speed 1/min: 2300
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 40.50...42.50
> 1000S.: (39.20...43.80)
12th speed 1/min: 1500
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 41.00...42.00
> 1000S.: (39.50...43.50)
18th speed 1/min: 750
Charge press. hPa: -
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 28.00...29.00
> 1000S.: (26.00...31.00)
20th speed 1/min: 750
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 39.50...42.00
> 1000S.: (38.00...43.00)

Electr. shutoff:

L20

1st speed 1/min: 450
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Idle delivery:

1st speed 1/min: 450
>KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 10.00...14.00
> 1000S.: (7.00...17.00)
Dispersion cm³/: 2.5
> 1000S.: (2.5)
2nd speed 1/min: 550
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
3rd speed 1/min: 400
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 20.50...25.50

Automatic starting fuel delivery:

1st speed 1/min: 300
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 37.00...57.00
> 1000S.: (37.00...57.00)

2nd speed 1/min: 600
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 14.00...34.00
> 1000S.: (14.00...34.00)

4th speed 1/min: 100
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 35.00...59.00
> 1000S.: (35.00...59.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.2...3.4
KF	mm: 5.2...5.6
MS	mm: 1.0...1.4
Ya	mm: 37.2...39.2
Yb	mm: 40.4...49.0

Remarks:

⋮

Operate control lever after each manifold-pressure compensator pressure change.

* Correction at adjusting nut

A = KSB adjustment point

B = KSB curve point

Ya = Distance between VE flange and speed-control lever in idle position

Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VW
Edition : 08.02.95
replaces : -
Calibrating oil : ISO-4113
Injection pump : VE5/8F2100L545-1
Type number : 0 460 485 020
Customer Part-No. :

Customer-specific information
Customer : VW

Engine : 2.4l. SD T4

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery block
Piston stroke mm: 1.0
> mm: ± 0.02(0.05)
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250
Setting value mm: 2.20...2.60
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250
Setting value bar: 5.70...6.30
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250
Del. quantity cm3/
> 1000S.: 36.00...37.00
Dispersion cm3/
> 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 540
Del. quantity cm3/
> 1000S.: 6.50...7.50
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2400
Del. quantity cm3/
> 1000S.: 10.00...14.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/: 35.00...85.00
mind> 1000S.: 35.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1500
Inj.-qty. cm3/
difference> 1000S.: -3.50...-9.50 #
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1500
TD-travel
difference> mm: -0.3...-0.5 #
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1790

TD travel mm: 5.00...5.80
> mm: (4.70...6.10)

Shutoff

electromagnet>Volt: 12

3rd speed 1/min: 1250

TD travel mm: 2.20...2.60

> mm: (1.70...3.10)

Shutoff

electromagnet>Volt: 12

4th speed 1/min: 1000

TD travel mm: 0.70...1.50

> mm: (0.40...1.80)

Shutoff

electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 1000

Supply-pump

pressure> bar: 5.00...5.60

Shutoff

electromagnet>Volt: 12

2nd speed 1/min: 1250

Supply-pump

pressure> bar: 5.70...6.30

Shutoff

electromagnet>Volt: 12

3rd speed 1/min: 1790

Supply-pump

pressure> bar: 7.20...7.80

> bar: (7.00...8.00)

Shutoff

electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 600

Shutoff

electromagnet>Volt: 12

Overflow : 41.70...83.40

quantity> cm3/10s: (27.80...97.30)

2nd speed 1/min: 2100

Shutoff

electromagnet>Volt: 12

Overflow : 55.60...139.90

quantity> cm3/10s: (41.70...152.90)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2600

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 0.00...6.00

> 1000S.: (0.00...6.00)

5th speed 1/min: 2400

Shutoff

electromagnet>Volt: 12

Del. quantity cm3/: 10.00...14.00

> 1000S.: (8.00...16.00)

8th speed 1/min: 2300

Shutoff

electromagnet>Volt: 12

Del. quantity cm3/: 17.00...27.00

> 1000S.: (16.00...28.00)

9th speed 1/min: 2100

Shutoff

electromagnet>Volt: 12

Del. quantity cm3/: 30.00...32.00

> 1000S.: (28.80...33.20)

12th speed 1/min: 1250

Shutoff

electromagnet>Volt: 12

Del. quantity cm3/: 36.00...37.00

> 1000S.: (34.30...38.70)

20th speed 1/min: 600

Shutoff

electromagnet>Volt: 12

Del. quantity cm3/: 32.30...35.30

> 1000S.: (30.80...36.80)

Electr. shutoff:

1st speed 1/min: 415

Del. quantity cm3/: 0.00...3.00

> 1000S.: (0.00...3.00)

Shutoff

electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 415

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 7.00...9.00

> 1000S.: (4.00...12.00)

Rest delivery:

1st speed 1/min: 540

Shutoff

electromagnet>Volt: 12

Del. quantity cm3/: 6.50...7.50

> 1000S.: (5.00...9.00)

2nd speed 1/min: 490

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 6.80...8.80

> 1000S.: (5.30...10.30)

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1st speed 1/min: 1500

Inj.-qty. cm³/ : -6.0...-8.0 '
difference > 1000S.: (-6.0...-8.0) '

Shutoff

electromagnet > Volt: 12

3rd speed 1/min: 1500

Inj.-qty. cm³/ : -3.5...-9.5 #
difference > 1000S.: (-2.5...-10.5) #

Shutoff

electromagnet > Volt: 12

TD-travel dif.measurement:

correttore anticipo iniezione (SV):

1st speed 1/min: 1500

TD-travel : -0.3...-0.5 #

difference > mm: (-0.3...-0.5) #

Shutoff

electromagnet > Volt: 12

SP press.-dif.measurement:

pompa di mandata (FP):

1st speed 1/min: 1500

Supply pump-

pressure > : -0.1...-0.3 '

difference > bar: (-0.2...-0.2) '

Shutoff

electromagnet > Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 180

Shutoff

electromagnet > Volt: 12

Del. quantity cm³/ : 35.00...85.00

> 1000S.: (35.00...85.00)

2nd speed 1/min: 380

Shutoff

electromagnet > Volt: 12

Del. quantity cm³/ : 17.00...37.00

> 1000S.: (17.00...37.00)

4th speed 1/min: 100

Shutoff

electromagnet > Volt: 12

Del. quantity cm³/ : 35.00...85.00

> 1000S.: (35.00...85.00)

Shutoff electromagnet:

Cut-in

> min voltage : 10.0

Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: 3.2...3.4

KF mm: 5.6...6.0

MS mm: 1.2...1.6

Ya mm: 32.8...34.8

Yb mm: 60.5...61.5

Remarks:

:

Ya = Distance between VE flange and
speed-control lever in idle
position

Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position

Measurement point = edge of control
lever on distributor-head end

On initial measurement, screw in
residual-quantity adjusting screw 2 mm.

Following pump adjustment, screw out
residual-quantity adjusting screw 2 mm.

Permissible port/port scatter with
stop test, electrical = max. 5.0
ccm/1000 S.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWV
Edition : 03.02.95
replaces : -
Calibrating oil : ISO-4113
Injection pump : VE5/8F2100L525-5
Type number : 0 460 485 022
Customer Part-No. :

Customer-specific information
Customer : VW

Engine : 2.4L SD - T4

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery block
Piston stroke mm: 1.0
> mm: +0.02(0.05)
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500
Setting value mm: 4.10...4.50
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1500
Setting value bar: 7.10...7.70
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250
Del. quantity cm3/
> 1000S.: 35.00...36.00
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 2.0
> 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 540
Del. quantity cm3/
> 1000S.: 6.50...7.50
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2400
Del. quantity cm3/
> 1000S.: 10.00...14.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/: 35.00...85.00
mind> 1000S.: 35.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1500
Inj.-qty. cm3/
difference> 1000S.: -7.50...-13.50#
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1500
TD-travel
difference> mm: -1.1...-1.3 #
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1790
TD travel mm: 5.90...6.70
> mm: (5.60...7.00)

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1500
TD travel mm: 4.10...4.50
> mm: (3.60...5.00)

Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1100
TD travel mm: 1.20...2.00
> mm: (0.90...2.30)

Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 1100
Supply-pump
pressure> bar: 5.90...6.50

Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1500
Supply-pump
pressure> bar: 7.10...7.70

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1790
Supply-pump
pressure> bar: 7.80...8.40

Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 600
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...83.40
quantity> cm³/10s: (27.80...97.30)

2nd speed 1/min: 2100
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.90
quantity> cm³/10s: (41.70...152.90)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2600
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 0.00...6.00
> 1000S.: (0.00...6.00)

5th speed 1/min: 2400
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 10.00...14.00

> 1000S.: (8.00...16.00)
8th speed 1/min: 2300
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 17.00...27.00
> 1000S.: (16.00...28.00)

9th speed 1/min: 2100
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 28.50...30.50
> 1000S.: (27.30...31.70)

11th speed 1/min: 1850
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 29.50...35.50

> 1000S.: -
12th speed 1/min: 1250
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 35.00...36.00
> 1000S.: (33.30...37.70)

20th speed 1/min: 600
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 31.80...34.80
> 1000S.: (30.30...36.30)

Mech. shutoff:

1st speed 1/min: 2100
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: 12

Electr. shutoff:

1st speed 1/min: 415
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 415
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 7.00...9.00
> 1000S.: (4.00...12.00)

Rest delivery:

1st speed 1/min: 540
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 6.50...7.50
> 1000S.: (5.00...9.00)
2nd speed 1/min: 465
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 7.00...9.00
> 1000S.: (4.00...12.00)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1500
Inj.-qty. cm³/ : -7.5...-13.5#
difference> 1000S.: (-6.5...-14.5)#
Shutoff

electromagnet>Volt: 12
3rd speed 1/min: 1500
Inj.-qty. cm³/: -6.0...-8.0 '
difference> 1000S.: (-6.0...-8.0) '
Shutoff

electromagnet>Volt: 12
5th speed 1/min: 1500
Inj.-qty. cm³/: 0.0...+3.00 *
difference> 1000S.: (0.0...+3.00) *
Shutoff

electromagnet>Volt: 12

TD-travel dif.measurement:
correttore anticipo iniezione (SV):
1st speed 1/min: 1500
TD-travel : -1.1...-1.3 #
difference> mm: (-1.1...-1.3) #
Shutoff

electromagnet>Volt: 12
2nd speed 1/min: 1500
TD-travel : -1.9...-2.3 *
difference> mm: (-1.5...-2.7) *

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: 1500
Supply pump-
pressure > : -0.1...-0.3 '
difference> bar: (-0.1...-0.3) '
Shutoff

electromagnet>Volt: 12
3rd speed 1/min: 1500
Supply pump-
pressure > : -0.8...-1.2 *
difference> bar: (-0.6...-1.4) *
Shutoff
electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 180
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 35.00...85.00

> 1000S.: (35.00...85.00)

2nd speed 1/min: 380

Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 17.00...37.00
> 1000S.: (17.00...37.00)

4th speed 1/min: 100

Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 35.00...85.00
> 1000S.: (35.00...85.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
K mm: 3.2...3.4
KF mm: 5.6...6.0
MS mm: 1.3...1.5
Ya mm: 32.8...34.8
Yb mm: 61.5...68.5

Ajustement Potentiometer:

Angle for
pot. > °: 25...35
Supply voltage
pot. > volt: 5.00
Output volt
pot. > volt: 0.70

Remarks:

:
:
On initial measurement, screw in
residual-quantity adjusting screw 2 mm.

Following pump adjustment, screw out
residual-quantity adjusting screw 2 mm.

Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

Permissible port/port scatter with
stop test, electrical = max. 5.0
ccm/1000 S.



BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWV
Edition : 03.02.95
replaces : -
Calibrating oil : ISO-4113
Injection pump : VE5/8F2100L457-2
Type number : 0 460 485 023
Customer Part-No. :

Customer-specific information
Customer : VW

Engine : 2.4L SD - T4

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery block
Piston stroke mm: 1.0
> mm: +0.02(0.05)
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500
Setting value mm: 4.10...4.50
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1500
Setting value bar: 7.10...7.70
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250
Del. quantity cm3/
> 1000S.: 35.00...36.00
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 2.0
> 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 540
Del. quantity cm3/
> 1000S.: 6.50...7.50
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2400
Del. quantity cm3/
> 1000S.: 10.00...14.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/: 35.00...85.00
mind> 1000S.: 35.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1500
Inj.-qty. cm3/
difference> 1000S.: -7.50...-13.50#
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1500
TD-travel
difference> mm: -1.1...-1.3 #
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1790
 TD travel mm: 5.90...6.70
 > mm: (5.60...7.00)
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 1500
 TD travel mm: 4.10...4.50
 > mm: (3.60...5.00)
 Shutoff
 electromagnet>Volt: 12
 4th speed 1/min: 1100
 TD travel mm: 1.20...2.00
 > mm: (0.90...2.30)
 Shutoff
 electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 1100
 Supply-pump
 pressure> bar: 5.90...6.50
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1500
 Supply-pump
 pressure> bar: 7.10...7.70
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 1790
 Supply-pump
 pressure> bar: 7.80...8.40
 Shutoff
 electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 600
 Shutoff
 electromagnet>Volt: 12
 Overflow : 41.70...83.40
 quantity> cm3/10s: (27.80...97.30)
 2nd speed 1/min: 2100
 Shutoff
 electromagnet>Volt: 12
 Overflow : 55.60...139.90
 quantity> cm3/10s: (41.70...152.90)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2600
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm3/: 0.00...6.00
 > 1000S.: (0.00...6.00)
 5th speed 1/min: 2400
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 10.00...14.00

> 1000S.: (8.00...16.00)
 8th speed 1/min: 2300
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 17.00...27.00
 > 1000S.: (16.00...28.00)
 9th speed 1/min: 2100
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 28.50...30.50
 > 1000S.: (27.30...31.70)
 11th speed 1/min: 1850
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 29.50...35.50
 > 1000S.: -
 12th speed 1/min: 1250
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 35.00...36.00
 > 1000S.: (33.30...37.70)
 20th speed 1/min: 600
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 31.80...34.80
 > 1000S.: (30.30...36.30)

Electr. shutoff:

1st speed 1/min: 415
 Del. quantity cm3/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 Shutoff
 electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 415
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm3/: 7.00...9.00
 > 1000S.: (4.00...12.00)

Rest delivery:

1st speed 1/min: 540
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 6.50...7.50
 > 1000S.: (5.00...9.00)
 2nd speed 1/min: 490
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm3/: 6.80...8.80

> 1000S.: (5.30...10.30)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1500
Inj.-qty. cm³/ : -7.5...-13.5#
difference> 1000S.: (-6.5...-14.5)#
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1500
Inj.-qty. cm³/ : -6.0...-8.0 '
difference> 1000S.: (-6.0...-8.0) '
Shutoff
electromagnet>Volt: 12
5th speed 1/min: 1500
Inj.-qty. cm³/ : 0.0...+3.00 *
difference> 1000S.: (0.0...+3.00) *
Shutoff
electromagnet>Volt: 12

TD-travel dif.measurement:
correttore anticipo iniezione (SV):
1st speed 1/min: 1500
TD-travel : -1.1...-1.3 #
difference> mm: (-1.1...-1.3) #
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1500
TD-travel : -1.9...-2.3 *
difference> mm: (-1.5...-2.7) *

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: 1500
Supply pump-
pressure > : -0.1...-0.3 '
difference> bar: (-0.1...-0.3) '
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1500
Supply pump-
pressure > : -0.8...-1.2 *
difference> bar: (-0.6...-1.4) *
Shutoff
electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 180
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 35.00...85.00
> 1000S.: (35.00...85.00)

2nd speed 1/min: 380
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 17.00...37.00
> 1000S.: (17.00...37.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 35.00...85.00
> 1000S.: (35.00...85.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
K mm: 3.2...3.4
KF mm: 5.6...6.0
MS mm: 1.3...1.5
Ya mm: 32.8...34.8
Yb mm: 60.5...71.5

Remarks:

:
:
On initial measurement, screw in residual-quantity adjusting screw 2 mm.

Following pump adjustment, screw out residual-quantity adjusting screw 2 mm.

Ya = Distance between VE flange and speed-control lever in idle position
Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWV
Edition : 06.02.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VES/8F2100L632
Type number : 0 460 485 024
Customer Part-No. :

Customer-specific information
Customer : VW

Engine : 2.4L SD - T4

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery block
Piston stroke mm: 1.0
> mm: ±0.02(0.05)
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250
Setting value mm: 2.20...2.60
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250
Setting value bar: 5.70...6.30
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250
Del. quantity cm³/
> 1000S.: 36.00...37.00
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 2.0
> 1000S.: (3.0)

Full-load speed regulation

Speed 1/min: 2400
Del. quantity cm³/
> 1000S.: 10.00...14.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm³/: 35.00...85.00
mind> 1000S.: 35.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1500
Inj.-qty. cm³/
difference> 1000S.: -3.50...-9.50#
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1500
TD-travel
difference> mm: -0.3...-0.5 #
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1790
TD travel mm: 5.00...5.80
> mm: (4.70...6.10)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1250
TD travel mm: 2.20...2.60

> mm: (1.70...3.10)
 Shutoff
 electromagnet>Volt: 12
 4th speed 1/min: 1000
 TD travel mm: 0.70...1.50
 > mm: (0.40...1.80)
 Shutoff
 electromagnet>Volt: 12

 Supply-pump pressure characteristic:

 1st speed 1/min: 1000
 Supply-pump
 pressure> bar: 5.00...5.60
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1250
 Supply-pump
 pressure> bar: 5.70...6.30
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 1790
 Supply-pump
 pressure> bar: 7.20...7.80
 Shutoff
 electromagnet>Volt: 12

 Overflow quantity at overflow valve:

 1st speed 1/min: 600
 Shutoff
 electromagnet>Volt: 12
 Overflow : 41.70...83.40
 quantity> cm3/10s: (27.80...97.30)
 2nd speed 1/min: 2100
 Shutoff
 electromagnet>Volt: 12
 Overflow : 55.60...139.90
 quantity> cm3/10s: (41.70...152.90)

 Delivery-quant. and breakaway char.:

 2nd speed 1/min: 2600
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm3/: 0.00...6.00
 > 1000S.: (0.00...6.00)
 5th speed 1/min: 2400
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 10.00...14.00
 > 1000S.: (8.00...16.00)
 8th speed 1/min: 2300
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 17.00...27.00
 > 1000S.: (16.00...28.00)
 9th speed 1/min: 2100
 Shutoff

electromagnet>Volt: 12
 Del. quantity cm3/: 30.00...32.00
 > 1000S.: (28.80...33.20)
 12th speed 1/min: 1250
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 36.00...37.00
 > 1000S.: (34.30...38.70)
 20th speed 1/min: 600
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 32.30...35.30
 > 1000S.: (30.80...36.80)

Electr. shutoff:

1st speed 1/min: 415
 Del. quantity cm3/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 Shutoff
 electromagnet>volt: -

Idle delivery:

1st speed 1/min: 415
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 7.00...9.00
 > 1000S.: (4.00...12.00)
 Dispersion cm3/: 2.0
 > 1000S.: (3.0)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1500
 Inj.-qty. cm3/ : -3.5...-9.5 #
 difference> 1000S.: (-2.5...-10.5)#
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 1500
 Inj.-qty. cm3/ : -6.0...-8.0 '
 difference> 1000S.: (-6.0...-8.0) '
 Shutoff
 electromagnet>Volt: 12
 5th speed 1/min: 1500
 Inj.-qty. cm3/ : 0.0...+3.00 *
 difference> 1000S.: (0.0...+3.00) *
 Shutoff
 electromagnet>Volt: 12

TD-travel dif.measurement:

correttore anticipo iniezione (SV):
 1st speed 1/min: 1500
 TD-travel : -0.3...-0.5 #
 difference> mm: (-0.3...-0.5) #
 Shutoff
 electromagnet>Volt: 12

2nd speed 1/min: 1500
TD-travel : -1.2...-1.6 *
difference> mm: (-0.8...-2.0) *

SP press.-dif.measurement:

pompa di mandata (FP):

1st speed 1/min: 1500

Supply pump-
pressure > : -0.1...-0.3 '
difference> bar: (-0.1...-0.3) '

Shutoff

electromagnet>Volt: 12

3rd speed 1/min: 1500

Supply pump-
pressure > : -0.8...-1.2 *
difference> bar: (-0.6...-1.4) *

Shutoff

electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 180

Shutoff

electromagnet>Volt: 12

Del. quantity cm³/: 35.00...85.00
> 1000S.: (35.00...85.00)

2nd speed 1/min: 380

Shutoff

electromagnet>Volt: 12

Del. quantity cm³/: 17.00...37.00
> 1000S.: (17.00...37.00)

4th speed 1/min: 100

Shutoff

electromagnet>Volt: 12

Del. quantity cm³/: 35.00...85.00
> 1000S.: (35.00...85.00)

Shutoff electromagnet:

Cut-in

>min voltage : 10.0

Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: 3.2...3.4

KF mm: 5.6...6.0

MS mm: 1.3...1.5

Ya mm: 32.8...34.8

Yb mm: 60.5...71.5

Remarks:

⋮

On initial measurement, screw in
residual-quantity adjusting screw 2 mm.

Following pump adjustment, screw out
residual-quantity adjusting screw 2 mm.

Ya = Distance between VE flange and
speed-control lever in idle
position

Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position

Measurement point = edge of control
lever on distributor-head end

Permissible port/port scatter with
stop test, electrical = max. 5.0
ccm/1000 S.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VW
Edition : 06.02.95
replaces : -
Calibrating oil : ISO-4113
Injection pump : VE5/8F2100L633
Type number : 0 460 485 025
Customer Part-No. :

Customer-specific information
Customer : VW

Engine : 2.4L SD - T4

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery block
Piston stroke mm: 1.0
> mm: ±0.02(0.05)
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500
Setting value mm: 4.10...4.50
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1500
Setting value bar: 7.10...7.70
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250
Del. quantity cm3/
> 1000S.: 35.00...36.00
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 2.0
> 1000S.: (3.0)

Full-load speed regulation

Speed 1/min: 2400
Del. quantity cm3/
> 1000S.: 10.00...14.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/: 35.00...85.00
mind> 1000S.: 35.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1500
Inj.-qty. cm3/
difference> 1000S.: -7.50...-13.50#
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1500
TD-travel
difference> mm: -1.1...-1.3 #
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1790
TD travel mm: 5.90...6.70
> mm: (5.60...7.00)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1500
TD travel mm: 4.10...4.50

> mm: (3.60...5.00)
 Shutoff
 electromagnet>Volt: 12
 4th speed 1/min: 1100
 TD travel mm: 1.20...2.00
 > mm: (0.90...2.30)
 Shutoff
 electromagnet>Volt: 12

 Supply-pump pressure characteristic:
 1st speed 1/min: 1100
 Supply-pump
 pressure> bar: 5.90...6.50
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1500
 Supply-pump
 pressure> bar: 7.10...7.70
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 1790
 Supply-pump
 pressure> bar: 7.80...8.40
 Shutoff
 electromagnet>Volt: 12

 Overflow quantity at overflow valve:
 1st speed 1/min: 600
 Shutoff
 electromagnet>Volt: 12
 Overflow : 41.70...83.40
 quantity> cm3/10s: (27.80...97.30)
 2nd speed 1/min: 2100
 Shutoff
 electromagnet>Volt: 12
 Overflow : 55.60...139.90
 quantity> cm3/10s: (41.70...152.90)

 Delivery-quant. and breakaway char.:
 2nd speed 1/min: 2600
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm3/: 0.00...6.00
 > 1000S.: (0.00...6.00)
 5th speed 1/min: 2400
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 10.00...14.00
 > 1000S.: (8.00...16.00)
 8th speed 1/min: 2300
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 17.00...27.00
 > 1000S.: (16.00...28.00)
 9th speed 1/min: 2100
 Shutoff

electromagnet>Volt: 12
 Del. quantity cm3/: 28.50...30.50
 > 1000S.: (27.30...31.70)
 12th speed 1/min: 1250
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 35.00...36.00
 > 1000S.: (33.30...37.70)
 20th speed 1/min: 600
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 31.80...34.80
 > 1000S.: (30.30...36.30)

Electr. shutoff:

1st speed 1/min: 415
 Del. quantity cm3/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 Shutoff
 electromagnet>volt: -

Idle delivery:

1st speed 1/min: 415
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 7.00...9.00
 > 1000S.: (4.00...12.00)
 Dispersion cm3/: 2.0
 > 1000S.: (3.0)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1500
 Inj.-qty. cm3/ : -7.5...-13.5#
 difference> 1000S.: (-6.5...-14.5)#
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 1500
 Inj.-qty. cm3/: -6.0...-8.0 '
 difference> 1000S.: (-6.0...-8.0) '
 Shutoff
 electromagnet>Volt: 12
 5th speed 1/min: 1500
 Inj.-qty. cm3/: 0.0...+3.00 *
 difference> 1000S.: (0.0...+3.00) *
 Shutoff
 electromagnet>Volt: 12

TD-travel dif.measurement:

correttore anticipo iniezione (SV):
 1st speed 1/min: 1500
 TD-travel : -1.1...-1.3 #
 difference> mm: (-1.1...-1.3) #
 Shutoff
 electromagnet>Volt: 12

2nd speed 1/min: 1500
TD-travel : -1.9...-2.3 *
difference> min: (-1.5...-2.7) *

SP press.-dif.measurement:

pompa di mandata (FP):

1st speed 1/min: 1500

Supply pump-
pressure > : -0.1...-0.3 '
difference> bar: (-0.1...-0.3) '

Shutoff
electromagnet>Volt: 12

3rd speed 1/min: 1500

Supply pump-
pressure > : -0.8...-1.2 *
difference> bar: (-0.6...-1.4) *

Shutoff
electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 180

Shutoff

electromagnet>Volt: 12

Del. quantity cm³/: 35.00...85.00
> 1000S.: (35.00...85.00)

2nd speed 1/min: 380

Shutoff

electromagnet>Volt: 12

Del. quantity cm³/: 17.00...37.00
> 1000S.: (17.00...37.00)

4th speed 1/min: 100

Shutoff

electromagnet>Volt: 12

Del. quantity cm³/: 35.00...85.00
> 1000S.: (35.00...85.00)

Shutoff electromagnet:

Cut-in

>min voltage : 10.0

Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: 3.2...3.4

KF mm: 5.6...6.0

MS mm: 1.3...1.5

Ya mm: 32.8...34.8

Yb mm: 60.5...71.5

Remarks:

⋮

On initial measurement, screw in
residual-quantity adjusting screw 2 mm.

Following pump adjustment, screw out
residual-quantity adjusting screw 2 mm.

Ya = Distance between VE flange and
speed-control lever in idle
position

Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position

Measurement point = edge of control
lever on distributor-head end

Permissible port/port scatter with
stop test, electrical = max. 5.0
ccm/1000 S.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SEA
Edition : 08.02.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/9F2300R54-2
Type number : 0 460 494 263
Customer Part-No. :

Customer-specific information
Customer : SEAT

Engine : X0 3972865 1.7L.

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery block
Piston stroke mm: 1.0
> mm: $\pm 0.02(0.04)$
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500
Setting value mm: 4.00...4.40
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1500
Setting value bar: 5.90...6.50
Shutoff
electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1500
Del. quantity cm³/
> 1000S.: 31.00...32.00
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 2.5
> 1000S.: (3.0)

Low-idle speed regulation

Speed 1/min: 415
Del. quantity cm³/
> 1000S.: 8.00...12.00
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 2.0
> 1000S.: (3.0)

Full-load speed regulation

Speed 1/min: 2525
Del. quantity cm³/
> 1000S.: 10.00...14.00
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm³/: 48.00...98.00
mind> 1000S.: 48.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1500
Inj.-qty. cm³/
difference> 1000S.: -11.5...-17.5 #
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1500
TD-travel
difference> mm: -0.4...-0.6 #
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2250
TD travel mm: 6.70...7.50
> mm: (6.40...7.80)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1500
TD travel mm: 4.00...4.40
> mm: (3.50...4.90)
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 800
TD travel mm: 1.50...2.30
> mm: (1.20...2.60)
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 600
Supply-pump pressure> bar: 3.80...4.40
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1500
Supply-pump pressure> bar: 5.90...6.50
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 2250
Supply-pump pressure> bar: 7.70...8.30
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 600
Shutoff
electromagnet>Volt: 12
Overflow quantity> cm³/10s: 41.70...83.40
(27.80...97.30)
2nd speed 1/min: 2250
Shutoff
electromagnet>Volt: 12
Overflow quantity> cm³/10s: 55.60...139.90
(41.70...152.90)

Delivery-quant. and breakaway char.:

3rd speed 1/min: 2675
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 0.00...6.00
> 1000S.: (0.00...6.00)
5th speed 1/min: 2525
Shutoff

electromagnet>Volt: 12
Del. quantity cm³/: 10.00...14.00
> 1000S.: (8.00...16.00)
8th speed 1/min: 2425
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 20.00...30.00
> 1000S.: (19.00...31.00)
9th speed 1/min: 2250
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 25.00...27.00
> 1000S.: (23.80...28.20)
12th speed 1/min: 1500
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 31.50...32.50
> 1000S.: (29.50...34.50)
20th speed 1/min: 600
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 21.00...24.00
> 1000S.: (19.50...25.50)

Electr. shutoff:

1st speed 1/min: 415
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Idle delivery:

1st speed 1/min: 415
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 8.00...12.00
> 1000S.: (6.00...14.00)
Dispersion cm³/: 2.0
> 1000S.: (3.0)
2nd speed 1/min: 900
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 0.00...4.00
> 1000S.: (0.00...4.00)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

3rd speed 1/min: 1500
Inj.-qty. cm³/: -11.5...-17.5
difference> 1000S.: (-9.5...-19.5)#
Shutoff
electromagnet>Volt: 12
5th speed 1/min: 1500
Inj.-qty. cm³/: +2.0...+8.0 *
difference> 1000S.: (+2.0...+8.0) *

Shutoff
electromagnet>Volt: 12

TD-travel dif.measurement:
correttore anticipo iniezione (SV):
1st speed 1/min: 1500
TD-travel : -0.4...-0.6 #
difference> mm: (-0.4...-0.6) #
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1500
TD-travel : -1.0...-1.4 *
difference> mm: (-0.6...-1.8) *
Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:
pompa di mandata (FP):
1st speed 1/min: 1500
3rd speed 1/min: 1500
Supply pump-
pressure > : -0.8...-1.2 *
difference> bar: (-0.6...-1.4) *
Shutoff
electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 280
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 35.00...85.00
> 1000s.: (35.00...85.00)

2nd speed 1/min: 480
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 15.00...35.00
> 1000s.: (15.00...35.00)

4th speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 48.00...98.00
> 1000s.: (48.00...98.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
K mm: 3.3...3.5
KF mm: 5.8...6.2
MS mm: 1.9...2.1
Ya mm: 36.2...40.2
Yb mm: 42.2...52.2

Remarks:

:
:
Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA
Edition : 08.02.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/9F2100R547
Type number : 0 460 494 348
Customer Part-No. :

Customer-specific information
Customer : FIAT-AUTO

Engine : M705 VT19.L

Power KW: 60
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery block
Piston stroke mm: 0.70
> mm: ±0.02(0.04)
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500
Charge press. hPa: 1000
Setting value mm: 5.80...6.20

AFB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1500
Charge press hPa: 1000
Setting value bar: 5.80...6.40
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1500
Charge press. hPa: 1000
Del. quantity cm³/
> 1000S.: 45.50...46.50
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Dispersion cm³/
> 1000S.: (2.5)

Full-load del. w/out charge press.:

Speed 1/min: 600
Del. quantity cm³/
> 1000S.: 41.00...42.00
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Residual-Delivery Setting

Speed 1/min: 600
Del. quantity cm³/
> 1000S.: 4.00...6.00
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2300
Charge press hPa: 1000
Del. quantity cm³/
> 1000S.: 31.00...37.00
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/: 50.00...80.00
mind> 1000S.: 50.00
KSB/AFB
Valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1500
Inj.-qty. cm3/
difference> 1000S.: -10.0...-18.0 #
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1500
TD-travel
difference> mm: -0.8...-1.0 #
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2100
Charge press hPa: 1000
TD travel mm: 8.60...9.40
> mm: (8.30...9.70)
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

3rd speed 1/min: 1500
Charge press hPa: 1000
TD travel mm: 5.80...6.20
> mm: (5.40...6.60)

KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

4th speed 1/min: 800
Charge press hPa: 1000
TD travel mm: 1.70...2.50
> mm: (1.40...2.80)

KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

5th speed 1/min: 1000
Charge press. hPa: 1000

TD travel mm: 4.50...7.50 B
> mm: (4.00...8.00) B

KSB/AFB
valve > Volt: -
Shutoff

electromagnet>Volt: 12
6th speed 1/min: 500
Charge press. hPa: 1000

TD travel mm: 3.20...4.80 A
> mm: (2.50...5.50) A

KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2100
Charge press. hPa: 1000
Supply-pump
pressure> bar: 7.50...8.10

KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

2nd speed 1/min: 1500
Charge press. hPa: 1000
Supply-pump
pressure> bar: 5.80...6.40

KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

3rd speed 1/min: 800
Charge press. hPa: 1000
Supply-pump
pressure> bar: 3.70...4.30

KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 600
Charge press. hPa: -
KSB/AFB
valve > Volt: 12

Shutoff
electromagnet>Volt: 12
Overflow : 75.06...119.54
quantity> cm3/10s: (75.06...119.54)

2nd speed 1/min: 2100
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12

Shutoff
electromagnet>Volt: 12
Overflow : 97.30...180.70
quantity> cm3/10s: (97.30...180.70)

Delivery-quant. and breakaway char.:

1st speed 1/min: 900*
Charge-air pressure-setting
point> hPa: 350
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 46.00...47.00
> 1000S.: (44.00...49.00)
3rd speed 1/min: 2650
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 0.00...7.00
> 1000S.: (0.00...7.00)
4th speed 1/min: 2450
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 13.00...21.00
> 1000S.: (12.00...22.00)
5th speed 1/min: 2300
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 31.00...37.00
> 1000S.: (29.00...39.00)
9th speed 1/min: 2100
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 45.00...48.00
> 1000S.: (44.00...49.00)
12th speed 1/min: 1500
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 45.50...46.50
> 1000S.: (44.00...48.00)
18th speed 1/min: 600
Charge press. hPa: -
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 41.00...42.00

> 1000S.: (39.00...44.00)
20th speed 1/min: 900
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 47.00...50.00
> 1000S.: (46.00...51.00)

Electr. shutoff:

1st speed 1/min: 450
Charge press. hPa: -
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 450
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 14.50...18.50
> 1000S.: (12.50...20.50)

Rest delivery:

1st speed 1/min: 600
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 4.00...6.00
> 1000S.: (3.00...7.00)
2nd speed 1/min: 550
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 5.50...8.50

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1500
Inj.-qty. cm³/ : -9.0...-11.0'
difference> 1000S.: (-9.0...-11.0)'
KSB/AFB
valve > Volt: 12
Shutoff

electromagnet>Volt: 12
 3rd speed 1/min: 1500
 Inj.-qty. cm3/: -10.0...-18.0#
 difference> 1000S.: (-10.0...-18.0)#
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 5th speed 1/min: 1500
 Inj.-qty. cm3/: 0.00...+3.00*
 difference> 1000S.: (0.00...+3.00)*
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12

TD-travel dif.measurement:
 correttore anticipo iniezione (SV):
 1st speed 1/min: 1500
 TD-travel : -0.8...-1.0 #
 difference> mm: (-0.8...-1.0) #
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 1500
 TD-travel : -1.1...-1.7 *
 difference> mm: (-1.0...-1.8) *
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12

SP press.-dif.measurement:
 pompa di mandata (FP):
 1st speed 1/min: 1500
 Supply pump-
 pressure > : -0.1...-0.3 '
 difference> bar: (-0.1...-0.3) '
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12

Automatic starting fuel delivery:
 1st speed 1/min: 220
 KSB/AFB
 valve > Volt: 12
 Timing valve Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 52.00...78.00
 > 1000S.: (52.00...78.00)
 2nd speed 1/min: 350
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12

Del. quantity cm3/: 35.00...45.00
 > 1000S.: (35.00...45.00)
 4th speed 1/min: 100
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 50.00...80.00
 > 1000S.: (50.00...80.00)

Shutoff electromagnet:
 Cut-in
 >min voltage : 10.0
 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation	
K	mm: 3.2...3.4
KF	mm: 5.6...6.0
MS	mm: 1.3...1.7
Ya	mm: 37.2...39.2
Yb	mm: 36.6...45.4

Remarks:
 :
 :
 Ya = Distance between VE flange and
 speed-control lever in idle
 position
 Measurement point = edge of control
 lever on drive end

Yb = Distance between VE flange and
 speed-control lever in rated speed
 position
 Measurement point = edge of control
 lever on distributor-head end

A = KSB adjustment point
 B = KSB curve point

Overflow restriction 0.75 mm - Part No.
 ..343,..344

Microswitch
 Gap A = 0.8...3.0 mm

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA
Edition : 08.02.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/9F2100R548
Type number : 0 460 494 349
Customer Part-No. :

Customer-specific information
Customer : FIAT-AUTO

Engine : M705 VT19.L

Power KW: 60
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery block
Piston stroke mm: 1.00
> mm: ±0.02(0.04)
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500
Charge press. hPa: 1000
Setting value mm: 5.80...6.20

M17

AFB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1500
Charge press hPa: 1000
Setting value bar: 5.80...6.40
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1500
Charge press. hPa: 1000
Del. quantity cm3/
> 1000S.: 45.50...46.50

KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 2.5
> 1000S.: (2.5)

Full-load del. w/out charge press.:

Speed 1/min: 600
Del. quantity cm3/
> 1000S.: 41.00...42.00

KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Residual-Delivery Setting

Speed 1/min: 600
Del. quantity cm3/
> 1000S.: 4.00...6.00

KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2300
Charge press hPa: 1000
Del. quantity cm3/
> 1000S.: 31.00...37.00

KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Start:

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Speed 1/min: 100
Del. quantity cm3/: 50.00...80.00
mind> 1000S.: 50.00
KSB/AFB
Valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1500
Inj.-qty. cm3/
difference> 1000S.: -10.0...-18.0 #
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1500
TD-travel
difference> mm: -0.8...-1.0 #
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2100
Charge press hPa: 1000
TD travel mm: 8.60...9.40
> mm: (8.30...9.70)

KSB/AFB
valve > Volt: 12

Shutoff
electromagnet>Volt: 12

3rd speed 1/min: 1500
Charge press hPa: 1000
TD travel mm: 5.80...6.20
> mm: (5.40...6.60)

KSB/AFB
valve > Volt: 12

Shutoff
electromagnet>Volt: 12

4th speed 1/min: 800
Charge press hPa: 1000
TD travel mm: 1.70...2.50
> mm: (1.40...2.80)

KSB/AFB
valve > Volt: 12

Shutoff
electromagnet>Volt: 12

5th speed 1/min: 1000
Charge press. hPa: 1000

TD travel mm: 4.50...7.50 B
> mm: (4.00...8.00) B

KSB/AFB
valve > Volt: -

Shutoff
electromagnet>Volt: 12

6th speed 1/min: 500
Charge press. hPa: 1000

TD travel mm: 3.20...4.80 A
> mm: (2.50...5.50) A

KSB/AFB
valve > Volt: -

Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2100
Charge press. hPa: 1000
Supply-pump
pressure> bar: 7.50...8.10

KSB/AFB
valve > Volt: 12

Shutoff
electromagnet>Volt: 12

2nd speed 1/min: 1500
Charge press. hPa: 1000

Supply-pump
pressure> bar: 5.80...6.40

KSB/AFB
valve > Volt: 12

Shutoff
electromagnet>Volt: 12

3rd speed 1/min: 800
Charge press. hPa: 1000

Supply-pump
pressure> bar: 3.70...4.30

KSB/AFB
valve > Volt: 12

Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 600
Charge press. hPa: -

KSB/AFB
valve > Volt: 12

Shutoff
electromagnet>Volt: 12

Overflow : 75.06...119.54
quantity> cm3/10s: (75.06...119.54)

2nd speed 1/min: 2100
Charge press. hPa: 1000

KSB/AFB
valve > Volt: 12

Shutoff
electromagnet>Volt: 12

Overflow : 97.30...180.70
quantity> cm3/10s: (97.30...180.70)

Delivery-quant. and breakaway char.:

1st speed 1/min: 900*
Charge-air pressure-setting
point> hPa: 350
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 46.00...47.00
> 1000S.: (44.00...49.00)
3rd speed 1/min: 2650
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 0.00...7.00
> 1000S.: (0.00...7.00)
4th speed 1/min: 2450
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 13.00...21.00
> 1000S.: (12.00...22.00)
5th speed 1/min: 2300
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 31.00...37.00
> 1000S.: (29.00...39.00)
9th speed 1/min: 2100
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 45.00...48.00
> 1000S.: (44.00...49.00)
12th speed 1/min: 1500
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 45.50...46.50
> 1000S.: (44.00...48.00)
18th speed 1/min: 600
Charge press. hPa: -
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 41.00...42.00

> 1000S.: (39.00...44.00)
20th speed 1/min: 900
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 47.00...50.00
> 1000S.: (46.00...51.00)

Electr. shutoff:

1st speed 1/min: 450
Charge press. hPa: -
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 450
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 14.50...18.50
> 1000S.: (12.50...20.50)

Rest delivery:

1st speed 1/min: 600
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 4.00...6.00
> 1000S.: (3.00...7.00)
2nd speed 1/min: 550
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 5.50...8.50

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1500
Inj.-qty. cm³/ : -9.0...-11.0'
difference> 1000S.: (-9.0...-11.0)'
KSB/AFB
valve > Volt: 12
Shutoff

electromagnet>Volt: 12
 3rd speed 1/min: 1500
 Inj.-qty. cm³/: -10.0...-18.0#
 difference> 1000S.: (-10.0...-18.0)#
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 5th speed 1/min: 1500
 Inj.-qty. cm³/: 0.00...+3.00*
 difference> 1000S.: (0.00...+3.00)*
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12

TD-travel dif.measurement:
 correttore anticipo iniezione (SV):
 1st speed 1/min: 1500
 TD-travel : -0.8...-1.0 #
 difference> mm: (-0.8...-1.0) #
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 1500
 TD-travel : -1.1...-1.7 *
 difference> mm: (-1.0...-1.8) *
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12

SP press.-dif.measurement:
 pompa di mandata (FP):
 1st speed 1/min: 1500
 Supply pump-
 pressure > : -0.1...-0.3 '
 difference> bar: (-0.1...-0.3) '
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 220
 KSB/AFB
 valve > Volt: 12
 Timing valve Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 52.00...78.00
 > 1000S.: (52.00...78.00)

2nd speed 1/min: 350
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12

Del. quantity cm³/: 35.00...45.00
 > 1000S.: (35.00...45.00)

4th speed 1/min: 100
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm³/: 50.00...80.00
 > 1000S.: (50.00...80.00)

Shutoff electromagnet:

Cut-in
 >min voltage : 10.0
 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation	
K	mm: 3.2...3.4
KF	mm: 5.2...5.4
MS	mm: 1.0...1.4
Ya	mm: 37.2...39.2
Yb	mm: 36.6...45.4

Ajustement Potentiometer:

Supply voltage
 pot. > volt: 5.00
 Output volt
 pot. > volt: 0.72

Remarks:

:
 :
 Ya = Distance between VE flange and
 speed-control lever in idle
 position
 Measurement point = edge of control
 lever on drive end

Yb = Distance between VE flange and
 speed-control lever in rated speed
 position
 Measurement point = edge of control
 lever on distributor-head end

A = KSB adjustment point
 B = KSB curve point

Overflow restriction 0.75 mm - Part No.
 ..343,..344

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA
Edition : 08.02.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/9F2300R549
Type number : 0 460 494 350
Customer Part-No. :

Customer-specific information
Customer : FIAT-AUTO

Engine : M705 VA 19.L

Power KW: 51
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery block
Piston stroke mm: 1.00
> mm: ±0.02(0.04)
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500
Setting value mm: 5.70...6.10
AFB/AFB

valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1500
Setting value bar: 5.60...6.20
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1500
Del. quantity cm3/
> 1000S.: 33.50...34.50
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 3.0
> 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 530
Del. quantity cm3/
> 1000S.: 1.00...3.00
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2475
Del. quantity cm3/
> 1000S.: 19.00...25.00
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Del. quantity cm3/: 35.00...75.00
mind> 1000S.: 35.00
KSB/AFB
Valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery: Inj.-qty.dif.measurement:

Speed 1/min: 1500
Inj.-qty. cm3/

difference> 1000S.: -9.00...-17.00#
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1500
TD-travel
difference> mm: -0.6...-0.8 #
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2300
TD travel mm: 8.40...9.20
> mm: (8.10...9.50)
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1500
TD travel mm: 5.70...6.10
> mm: (5.20...6.60)
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 800
TD travel mm: 2.60...3.40
> mm: (2.30...3.70)
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
5th speed 1/min: 1000
TD travel mm: 4.50...7.50 B
> mm: (4.50...7.50) B
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12
6th speed 1/min: 500
TD travel mm: 3.90...5.50 A
> mm: (3.90...5.50) A
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2300
Supply-pump

pressure> bar: 7.40...8.00
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1500
Supply-pump
pressure> bar: 5.60...6.20
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 600
Supply-pump
pressure> bar: 3.40...4.00
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 800
Supply-pump
pressure> bar: 3.90...4.50
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 600
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...83.40
quantity> cm³/10s: (26.70...98.40)
2nd speed 1/min: 2300
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.00
quantity> cm³/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2900
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
3rd speed 1/min: 2700
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 1.00...9.00

> 1000S.: (0.00...10.00)
 5th speed 1/min: 2475
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 19.00...25.00
 > 1000S.: (17.00...27.00)
 9th speed 1/min: 2300
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 31.70...34.30
 > 1000S.: (30.50...35.50)
 12th speed 1/min: 1500
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 33.50...34.50
 > 1000S.: (31.50...36.50)
 15th speed 1/min: 1000
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 31.20...34.20
 > 1000S.: (30.20...35.20)
 20th speed 1/min: 600
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 28.50...32.50
 > 1000S.: (27.50...33.50)

Electr. shutoff:

1st speed 1/min: 450
 Del. quantity cm3/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 Shutoff
 electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 450
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm3/: 8.50...10.50
 > 1000S.: (6.50...12.50)

2nd speed 1/min: 350
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 20.00...26.00
 > 1000S.: -

High Idle:

1st speed 1/mi: 500
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 15.00...17.00
 > 1000S.: (13.00...19.00)
 > 1000S.: -

Rest delivery:

1st speed 1/min: 530
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 1.00...3.00
 > 1000S.: (0.50...3.50)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1500
 Inj.-qty. cm3/ : -7.5...-9.5 *
 difference> 1000S.: (-7.5...-9.5) *
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 1500
 Inj.-qty. cm3/: -9.0...-17.0#
 difference> 1000S.: (-9.0...-17.0)#
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12

TD-travel dif.measurement:

correttore anticipo iniezione (SV):
 1st speed 1/min: 1500
 TD-travel : -0.6...-0.8 #
 difference> mm: (-0.6...-0.8) #
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12

SP press.-dif.measurement:

pompa di mandata (FP):
 1st speed 1/min: 1500

Supply pump-
pressure > : -0.1...-0.3 *
difference> bar: (-0.1...-0.3) *
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 130
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 45.00...75.00
> 1000S.: (45.00...75.00)

2nd speed 1/min: 350
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 20.00...40.00
> 1000S.: (20.00...40.00)

4th speed 1/min: 100
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 35.00...75.00
> 1000S.: (40.00...70.00)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.2...3.4
KF	mm: 5.3...5.7
MS	mm: 1.4...1.6
Ya	mm: 37.2...39.2
Yb	mm: 41.1...49.5

Remarks:

⋮

Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and

speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

A = KSB adjustment point
B = KSB curve point

Permissible port-to-port scatter with
stop test, electrical = max. 5.0
ccm/1000 S.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : OPE
Edition : 03.02.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/9F2250R571
Type number : 0 460 494 353
Customer Part-No. :

Customer-specific information
Customer : OPEL

Engine : 1,7 DT-LC

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 127.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500
Charge press. hPa: 1000
Setting value mm: 4.10...4.30
AFB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1500
Charge press hPa: 1000
Setting value bar: 6.10...6.70
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1200
Charge press. hPa: 1000
Del. quantity cm3/
> 1000S.: 32.80...33.80
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Dispersion cm3/: 2.5
> 1000S.: (2.5)

Full-load del. w/out charge press.:

Speed 1/min: 500
Del. quantity cm3/
> 1000S.: 28.50...33.50
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

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Low-idle speed regulation

Speed 1/min: 485
Del. quantity cm3/
> 1000S.: 8.00...10.00
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 2.5
> 1000S.: (2.5)

Residual-Delivery Setting

Speed 1/min: 800
Del. quantity cm3/
> 1000S.: 3.50...4.50
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2550
Charge press hPa: 1000

Del. quantity cm³/
> 1000S.: 22.00...26.00

KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Charge press hPa: -
Del. quantity cm³/: 36.00...52.00
mind> 1000S.: 36.00
KSB/AFB
Valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1000
Charge press hPa: 1000
Inj.-qty. cm³/
difference> 1000S.: -8.00...10.00 *
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
SP press.-dif.measurement

1.Speed 1/min: 1000
Charge press hPa: 1000
Supply pump
pressure> difference> bar: -0.1...-0.3 *
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2250
Charge press hPa: 1000
TD travel mm: 7.40...8.00
> mm: (7.10...8.30)
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1500
Charge press hPa: 1000
TD travel mm: 4.10...4.30
> mm: (3.60...4.80)
KSB/AFB
valve > Volt: 12

Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1000
Charge press hPa: 1000
TD travel mm: 1.40...2.00
> mm: (1.10...2.30)

KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
9th speed 1/min: 400
Charge press. hPa: 1000
TD travel mm: 0.8...2.8 A
> mm: (0.6...3.0) A

KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12
10th speed 1/min: 800
Charge press. hPa: 1000
TD travel mm: 2.0...4.0 B
> mm: (1.8...4.2) B

KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2250
Charge press. hPa: 1000
Supply-pump
pressure> bar: 8.20...8.80
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1500
Charge press. hPa: 1000
Supply-pump
pressure> bar: 6.10...6.70
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1000
Charge press. hPa: 1000
Supply-pump
pressure> bar: 4.70...5.30
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 700
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12

Shutoff
 electromagnet>Volt: 12
 Overflow : 41.70...86.10
 quantity> cm3/10s: (26.70...101.10)
 2nd speed 1/min: 2250
 Charge press. hPa: 1000
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Overflow : 55.60...139.00
 quantity> cm3/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2950
 Charge press. hPa: 1000
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm3/: 0.00...4.00
 > 1000S.: (0.00...4.00)
 3rd speed 1/min: 2725
 Charge press. hPa: 1000
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 4.00...10.00
 > 1000S.: -
 5th speed 1/min: 2550
 Charge press. hPa: 1000
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 22.00...26.00
 > 1000S.: (20.00...28.00)
 9th speed 1/min: 2250
 Charge press. hPa: 1000
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm3/: 35.20...37.80
 > 1000S.: (34.20...38.80)
 10th speed 1/min: 1800
 Charge press. hPa: 1000
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 34.70...37.70
 > 1000S.: (33.90...38.50)
 12th speed 1/min: 1200
 Charge press. hPa: 1000
 KSB/AFB
 valve > Volt: 12

Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 32.80...33.80
 > 1000S.: (31.00...35.60)
 20th speed 1/min: 700
 Charge press. hPa: 1000
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 30.00...33.00
 > 1000S.: (28.50...34.50)
 21th speed 1/min: 500
 Charge press. hPa: -
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 28.50...33.50
 > 1000S.: (28.00...34.00)

Electr. shutoff:

1st speed 1/min: 485
 Charge press. hPa: -
 Del. quantity cm3/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 Shutoff
 electromagnet>volt: -
 KSB/AFB
 valve > Volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 485
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm3/: 8.00...10.00
 > 1000S.: (6.00...12.00)
 2nd speed 1/min: 460
 KSB/AFB
 valve > Volt: 12
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 13.50...18.50
 > 1000S.: -

High Idle:

1st speed 1/mi: 540
 KSB/AFB
 valve > Volt: 12

Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 8.00...10.00
> 1000S.: (5.50...12.50)

Rest delivery:

1st speed 1/min: 800
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 3.50...4.50
> 1000S.: (2.00...6.00)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1000
Charge press. hPa: 1000
Inj.-qty. cm³/: -7.0...-15.0 "
difference> 1000S.: -
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1000
Charge press. hPa: 1000
Inj.-qty. cm³/: 4.0...6.0 'z
difference> 1000S.: -
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12

TD-travel dif.measurement:
correttore anticipo iniezione (SV):

1st speed 1/min: 1000
Charge press. hPa: 1000
TD-travel : -0.5...-0.7 "
difference> mm: -
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1000
Charge press. hPa: 1000
TD-travel : -0.9...-1.5 '
difference> mm: -
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Part-load del.at 3rd inj.-qty.
terza fermo della portata
stop (EGR set)
scarico) (ARF)
gaz d'échappement-ARF)
Spacing mm: 12.0

1st speed 1/min: 1000
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 14.00...16.00
> 1000S.: (12.50...17.50)

Automatic starting fuel delivery:

1st speed 1/min: 250
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 40.00...50.00
> 1000S.: -

2nd speed 1/min: 400
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 27.00...37.00
> 1000S.: -

3rd speed 1/min: 100
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 47.00...47.00

4th speed 1/min: 100
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 36.00...52.00
> 1000S.: -

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
K mm: 3.2...3.4
KF mm: 5.2...5.6
MS mm: 0.7...1.1
Ya mm: 24.2...26.2
Yb mm: 53.7...64.3

Remarks:

Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

Z = Absolute delivery

Pump in stepped LDA

Permissible port/port scatter with
stop test, electrical = max. 5.0
ccm/1000 S.



BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VW
Edition : 07.02.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/9F2300R599
Type number : 0 460 494 366
Customer Part-No. :

Customer-specific information
Customer : VW

Engine : 1,9 L UD B4

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 000

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 840

Start of delivery block
Piston stroke mm: 0.8
> mm: $\pm 0.02(0.05)$
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250
Charge press. hPa: 750
Setting value mm: 4.30...4.50
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250
Charge press hPa: 750
Setting value bar: 5.40...6.00
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1250
Charge press. hPa: 750
Del. quantity cm³/
> 1000S.: 50.00...51.00
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 2.5
> 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 550
Del. quantity cm³/
> 1000S.: 7.00...8.00
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2600
Charge press hPa: 750
Del. quantity cm³/
> 1000S.: 9.00...13.00
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery: Inj.-qty.dif.measurement:

Speed 1/min: 1250
Inj.-qty. cm³/
difference> 1000S.: -8.00...-12.00#
Shutoff
electromagnet>Volt: 12
TD-travel dif.measurement

1.Speed 1/min: 1250
TD-travel
difference> mm: -1.9...-2.1 #
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2100
Charge press hPa: 750
TD travel mm: 8.00...8.60

> mm: (7.50...9.10)
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 1250
 Charge press hPa: 750
 TD travel mm: 4.30...4.50
 > mm: (3.60...5.20)
 Shutoff
 electromagnet>Volt: 12
 4th speed 1/min: 750
 Charge press hPa: 750
 TD travel mm: 1.50...2.10
 > mm: (1.00...2.60)
 Shutoff
 electromagnet>Volt: 12
 5th speed 1/min: 1250
 Charge press. hPa: -
 TD travel mm: 0.00...0.60
 > mm: (0.00...0.60)
 KSB/AFB
 valve > Volt: ALFB
 Shutoff
 electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 750
 Charge press. hPa: 750
 Supply-pump
 pressure> bar: 4.30...4.90
 Shutoff
 electromagnet>Volt: 12
 2nd speed 1/min: 1250
 Charge press. hPa: 750
 Supply-pump
 pressure> bar: 5.40...6.00
 Shutoff
 electromagnet>Volt: 12
 3rd speed 1/min: 2100
 Charge press. hPa: 750
 Supply-pump
 pressure> bar: 7.40...8.00
 Shutoff
 electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 1250
 Charge press. hPa: 750
 Shutoff
 electromagnet>Volt: 12
 Overflow : 41.70...86.18
 quantity> cm3/10s: (29.19...98.69)
 2nd speed 1/min: 2100
 Charge press. hPa: 750
 Shutoff
 electromagnet>Volt: 12
 Overflow : 55.60...139.90
 quantity> cm3/10s: (41.70...152.90)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2750
 Charge press. hPa: 750
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm3/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 5th speed 1/min: 2600
 Charge press. hPa: 750
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 9.00...13.00
 > 1000S.: (7.00...15.00)
 8th speed 1/min: 2400
 Charge press. hPa: 750
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 32.50...42.50
 > 1000S.: (31.50...43.50)
 9th speed 1/min: 2100
 Charge press. hPa: 750
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 42.00...44.00
 > 1000S.: (40.80...45.20)
 12th speed 1/min: 1250
 Charge press. hPa: 750
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 50.00...51.00
 > 1000S.: (48.30...52.70)
 21th speed 1/min: 450
 Charge press. hPa: -
 Shutoff
 electromagnet>Volt: 12
 Del. quantity cm3/: 37.20...43.20
 > 1000S.: (34.70...45.70)

Electr. shutoff:

1st speed 1/min: 450
 Del. quantity cm3/: 0.00...3.00
 > 1000S.: (0.00...3.00)
 Shutoff
 electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 450
 Shutoff
 electromagnet Volt: 12
 Del. quantity cm3/: 16.00...18.00

> 1000S.: (13.00...21.00)
Dispersion cm3/: 2.0
> 1000S.: (3.0)

High Idle:

1st speed 1/mi: 550
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 16.00...18.00
> 1000S.: (13.00...21.00)

Rest delivery:

1st speed 1/min: 550
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 7.00...8.00
> 1000S.: (5.50...9.50)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1250
Inj.-qty. cm3/ : -7.0...-11.0#
difference> 1000S.: (-5.0...-13.0)#
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250
3rd speed 1/min: 1250
Inj.-qty. cm3/: -4.5...-6.5 '
difference> 1000S.: (-4.5...-6.5) '
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1250
5th speed 1/min: 1250
Inj.-qty. cm3/: 0.00...3.00 *
difference> 1000S.: (0.00...3.00) *
Shutoff
electromagnet>Volt: 12

TD-travel dif.measurement:

correttore anticipo iniezione (SV):
1st speed 1/min: 1250
TD-travel : -1.9...-2.1 #
difference> mm: (-1.9...-2.1) #
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1250
TD-travel : -2.5...-2.9 *
difference> mm: (-2.1...-3.3) *
Shutoff
electromagnet>Volt: 12

SP press.-dif.measurement:

pompa di mandata (FP):
1st speed 1/min: 1250
Supply pump-
pressure > : -0.1...-0.3 '
difference> bar: (-0.1...-0.3) '

Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250
Supply pump-
pressure > : -1.0...-1.4 *
difference> bar: (-0.8...-1.4) *

Part-load del.at 3rd inj.-qty.
terza fermo della portata
stop (EGR set)
scarico) (ARF)
gaz d'échappement-ARF)
Spacing mm: 12.0

1st speed 1/min: 1000
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 34.00...36.00
> 1000S.: (32.00...38.00)

Automatic starting fuel delivery:

1st speed 1/min: 180
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 35.00...55.00
> 1000S.: (35.00...55.00)

2nd speed 1/min: 380
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 31.00...51.00
> 1000S.: (31.00...51.00)

3rd speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 37.00...43.00
> 1000S.: (32.50...47.50)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
K mm: 3.6...3.8
KF mm: KOT
MS mm: 1.0...1.4
Ya mm: 37.6...41.6
Yb mm: 50.4...63.3

Remarks:

:
:
Ya = Distance between VE flange and

speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

Pump in stepped LDA

Permissible port/port scatter with
stop test, electrical = max. 5.0
ccm/1000 S.



BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VW
Edition : 07.02.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/9F2200R603
Type number : 0 460 494 368
Customer Part-No. :

Customer-specific information
Customer : VW

Engine : 1,9 l UD MVEG 2

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.50

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 111

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery block
Piston stroke mm: 0.8
> mm: +0.02(0.05)
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250
Charge press. hPa: 750
Setting value mm: 5.30...5.70
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250
Charge press hPa: 750
Setting value bar: 5.50...6.10
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1250
Charge press. hPa: 750
Del. quantity cm³/
> 1000S.: 46.00...47.00
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 2.5
> 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 550
Del. quantity cm³/
> 1000S.: 7.50...8.50
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2525
Charge press hPa: 750
Del. quantity cm³/
> 1000S.: 18.00...22.00
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2000
Charge press hPa: 750
TD travel mm: 8.20...9.00
> mm: (7.80...9.40)
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1250
Charge press hPa: 750
TD travel mm: 5.30...5.70
> mm: (4.70...6.30)
Shutoff
electromagnet>Volt: 12
4th speed 1/min: 750
Charge press hPa: 750
TD travel mm: 3.00...3.80
> mm: (2.60...4.20)
Shutoff
electromagnet>Volt: 12
5th speed 1/min: 2000

Charge press. hPa: 750
TD travel mm: 0.40...1.20
> mm: - ALFB
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 750
Charge press. hPa: 750
Supply-pump
pressure> bar: 4.00...4.60
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250
Charge press. hPa: 750
Supply-pump
pressure> bar: 5.50...6.10
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 2000
Charge press. hPa: 750
Supply-pump
pressure> bar: 7.70...8.30
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 1250
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...86.18
quantity> cm³/10s: (29.19...98.69)
2nd speed 1/min: 2100
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.90
quantity> cm³/10s: (41.70...152.90)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2750
Charge press. hPa: 750
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
5th speed 1/min: 2525
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 18.00...22.00
> 1000S.: (16.00...24.00)
8th speed 1/min: 2400

Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 29.50...39.50
> 1000S.: (28.50...40.50)
9th speed 1/min: 2100
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 45.20...47.20
> 1000S.: (44.00...48.40)
12th speed 1/min: 1250
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 46.00...47.00
> 1000S.: (44.30...48.70)
21th speed 1/min: 450
Charge press. hPa: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 41.70...47.70
> 1000S.: (39.20...50.20)

Electr. shutoff:

1st speed 1/min: 450
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 450
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 21.00...23.00
> 1000S.: (18.00...26.00)

High Idle:

1st speed 1/mi: 550
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 17.00...19.00
> 1000S.: (14.00...22.00)

Rest delivery:

1st speed 1/min: 550
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 7.50...8.50

> 1000s.: (6.00...10.00)

Automatic starting fuel delivery:

1st speed 1/min: 180

Shutoff

electromagnet>Volt: 12

Del. quantity cm³/: 35.00...55.00

> 1000s.: (35.00...55.00)

2nd speed 1/min: 380

Shutoff

electromagnet>Volt: 12

Del. quantity cm³/: 31.00...51.00

> 1000s.: (31.00...51.00)

3rd speed 1/min: 100

Shutoff

electromagnet>Volt: 12

Del. quantity cm³/: 40.00...46.00

> 1000s.: (35.50...50.50)

Shutoff electromagnet:

Cut-in

>min voltage : 10.0

Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: 3.6...3.8

KF mm: KOT

MS mm: 1.0...1.4

Ya mm: 36.0...40.0

Yb mm: 48.6...58.4

Remarks:

⋮

Ya = Distance between VE flange and speed-control lever in idle position

Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control lever on distributor-head end

Pump in stepped LDA

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWV
Edition : 08.02.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/9F2200R604
Type number : 0 460 494 369
Customer Part-No. :

Customer-specific information
Customer : VW

Engine : 1,9 l UD MVEG 2

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.50

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 111

Opening
Pressure> bar: 147.00...150.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery block
Piston stroke mm: 0.8
> mm: +0.02(0.05)
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250
Charge press. hPa: 750
Setting value mm: 5.30...5.70
Shutoff
electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250
Charge press hPa: 750
Setting value bar: 5.50...6.10
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1250
Charge press. hPa: 750
Del. quantity cm³/
> 1000S.: 46.00...47.00
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 2.5
> 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 550
Del. quantity cm³/
> 1000S.: 7.50...8.50
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2525
Charge press hPa: 750
Del. quantity cm³/
> 1000S.: 18.00...22.00
Shutoff
electromagnet>Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2000
Charge press hPa: 750
TD travel mm: 8.20...9.00
> mm: (7.80...9.40)

Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1250
Charge press hPa: 750
TD travel mm: 5.30...5.70
> mm: (4.70...6.30)

Shutoff
electromagnet>Volt: 12
4th speed 1/min: 750
Charge press hPa: 750
TD travel mm: 3.00...3.80
> mm: (2.60...4.20)

Shutoff
electromagnet>Volt: 12
5th speed 1/min: 2000

Charge press. hPa: 750
TD travel mm: 0.40...1.20
> mm: - ALFB
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 750
Charge press. hPa: 750
Supply-pump
pressure> bar: 4.00...4.60
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1250
Charge press. hPa: 750
Supply-pump
pressure> bar: 5.50...6.10
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 2000
Charge press. hPa: 750
Supply-pump
pressure> bar: 7.70...8.30
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 1250
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Overflow : 41.70...86.18
quantity> cm³/10s: (29.19...98.69)
2nd speed 1/min: 2100
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.90
quantity> cm³/10s: (41.70...152.90)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2750
Charge press. hPa: 750
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
5th speed 1/min: 2525
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 18.00...22.00
> 1000S.: (16.00...24.00)
8th speed 1/min: 2400

Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 29.50...39.50
> 1000S.: (28.50...40.50)
9th speed 1/min: 2100
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 45.20...47.20
> 1000S.: (44.00...48.40)
12th speed 1/min: 1250
Charge press. hPa: 750
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 46.00...47.00
> 1000S.: (44.30...48.70)
21th speed 1/min: 450
Charge press. hPa: -
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 41.70...47.70
> 1000S.: (39.20...50.20)

Electr. shutoff:

1st speed 1/min: 450
Del. quantity cm³/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 450
Shutoff
electromagnet Volt: 12
Del. quantity cm³/: 21.00...23.00
> 1000S.: (18.00...26.00)

High Idle:

1st speed 1/mi: 500
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 17.00...19.00
> 1000S.: (14.00...22.00)

Rest delivery:

1st speed 1/min: 550
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 7.50...8.50

> 1000S.: (6.00...10.00)
Automatic starting fuel delivery:
1st speed 1/min: 180
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 35.00...55.00
> 1000S.: (35.00...55.00)

2nd speed 1/min: 380
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 31.00...51.00
> 1000S.: (31.00...51.00)

3rd speed 1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 40.00...46.00
> 1000S.: (35.50...50.50)

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.6...3.8
KF	mm: KOT
MS	mm: 1.0...1.4
Ya	mm: 36.0...40.0
Yb	mm: 48.6...58.4

Remarks:

⋮

Ya = Distance between VE flange and speed-control lever in idle position
Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Pump in stepped LDA

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : OPE
Edition : 03.02.95
replaces : -
Calibrating oil : ISO-4113

Injection pump : VE4/9F2250R571-1
Type number : 0 460 494 372
Customer Part-No. :

Customer-specific information
Customer : OPEL

Engine : 1,7 DT-LC

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil
return>temp. > °C
with>thermometer> : 40.00...48.00
Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder
assembly> : 1 688 901 022

Opening
Pressure> bar: 127.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00
x Wall>thickness : 2.00
x Length> mm: 450

Start of delivery
Prestroke mm: -
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500
Charge press. hPa: 1000
Setting value mm: 4.10...4.30
AFB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

M12

Supply-pump pressure

Speed 1/min: 1500
Charge press hPa: 1000
Setting value bar: 6.10...6.70
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1200
Charge press. hPa: 1000
Del. quantity cm³/
> 1000S.: 32.80...33.80
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Dispersion cm³/: 2.5
> 1000S.: (2.5)

Full-load del. w/out charge press.:

Speed 1/min: 500
Del. quantity cm³/
> 1000S.: 28.50...33.50
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

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Low-idle speed regulation

Speed 1/min: 485
Del. quantity cm³/
> 1000S.: 8.00...10.00
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 2.5
> 1000S.: (2.5)

Residual-Delivery Setting

Speed 1/min: 800
Del. quantity cm³/
> 1000S.: 3.50...4.50
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2550
Charge press hPa: 1000

Del. quantity cm³/
> 1000S.: 22.00...26.00
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Start:

Speed 1/min: 100
Charge press hPa: -
Del. quantity cm³/: 36.00...52.00
mind> 1000S.: 36.00
KSB/AFB
Valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

Speed 1/min: 1000
Charge press hPa: 1000
Inj.-qty. cm³/
difference> 1000S.: -8.00...10.00 *
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
SP press.-dif.measurement

1.Speed 1/min: 1000
Charge press hPa: 1000
Supply pump
pressure>
difference> bar: -0.1...-0.3 *
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2250
Charge press hPa: 1000
TD travel mm: 7.40...8.00
> mm: (7.10...8.30)
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1500
Charge press hPa: 1000
TD travel mm: 4.10...4.30
> mm: (3.60...4.80)
KSB/AFB
valve > Volt: 12

Shutoff
electromagnet>Volt: 12
4th speed 1/min: 1000
Charge press hPa: 1000
TD travel mm: 1.40...2.00
> mm: (1.10...2.30)
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
9th speed 1/min: 400
Charge press. hPa: 1000
TD travel mm: 0.8...2.8 A
> mm: (0.6...3.0) A
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12
10th speed 1/min: 800
Charge press. hPa: 1000
TD travel mm: 2.0...4.0 B
> mm: (1.8...4.2) B
KSB/AFB
valve > Volt: -
Shutoff
electromagnet>Volt: 12

Supply-pump pressure characteristic:

1st speed 1/min: 2250
Charge press. hPa: 1000
Supply-pump
pressure> bar: 8.20...8.80
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1500
Charge press. hPa: 1000
Supply-pump
pressure> bar: 6.10...6.70
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
3rd speed 1/min: 1000
Charge press. hPa: 1000
Supply-pump
pressure> bar: 4.70...5.30
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Overflow quantity at overflow valve:

1st speed 1/min: 700
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12

Shutoff
electromagnet>Volt: 12
Overflow : 41.70...86.10
quantity> cm3/10s: (26.70...101.10)
2nd speed 1/min: 2250
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Overflow : 55.60...139.00
quantity> cm3/10s: (40.60...154.00)

Delivery-quant. and breakaway char.:

2nd speed 1/min: 2950
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 0.00...4.00
> 1000S.: (0.00...4.00)
3rd speed 1/min: 2725
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 4.00...10.00
> 1000S.: -
5th speed 1/min: 2550
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 22.00...26.00
> 1000S.: (20.00...28.00)
9th speed 1/min: 2250
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 35.20...37.80
> 1000S.: (34.20...38.80)
10th speed 1/min: 1800
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 34.70...37.70
> 1000S.: (33.90...38.50)
12th speed 1/min: 1200
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12

Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 32.80...33.80
> 1000S.: (31.00...35.60)
20th speed 1/min: 700
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 30.00...33.00
> 1000S.: (28.50...34.50)
21th speed 1/min: 500
Charge press. hPa: -
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 28.50...33.50
> 1000S.: (28.00...34.00)

Electr. shutoff:

1st speed 1/min: 485
Charge press. hPa: -
Del. quantity cm3/: 0.00...3.00
> 1000S.: (0.00...3.00)
Shutoff
electromagnet>volt: -
KSB/AFB
valve > Volt: -

Damper set qty.:

LFG-setting:

Idle delivery:

1st speed 1/min: 485
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 8.00...10.00
> 1000S.: (6.00...12.00)
2nd speed 1/min: 460
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 13.50...18.50
> 1000S.: -

High Idle:

1st speed 1/mi: 540
KSB/AFB
valve > Volt: 12

Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 8.00...10.00
> 1000S.: (5.50...12.50)

Rest delivery:

1st speed 1/min: 800
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 3.50...4.50
> 1000S.: (2.00...6.00)

Load-dependent start of delivery:
Inj.-qty.dif.measurement:

1st speed 1/min: 1000
Charge press. hPa: 1000
Inj.-qty. cm³/: -7.0...-15.0 "
difference> 1000S.: -
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1000
Charge press. hPa: 1000
Inj.-qty. cm³/: 4.0..6.0 'Z
difference> 1000S.: -
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet Volt: 12

TD-travel dif.measurement:
correttore anticipo iniezione (SV):
1st speed 1/min: 1000
Charge press. hPa: 1000
TD-travel : -0.5...-0.7 "
difference> mm: -
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
2nd speed 1/min: 1000
Charge press. hPa: 1000
TD-travel : -0.9...-1.5 '
difference> mm: -
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12

Part-load del.at 3rd inj.-qty.
terza fermo della portata
stop (EGR set)
scarico) (ARF)
gaz d'échappement-ARF)
Spacing mm: 12.0

1st speed 1/min: 1000
Charge press. hPa: 1000
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 14.00...16.00
> 1000S.: (12.50...17.50)

Automatic starting fuel delivery:

1st speed 1/min: 250
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 40.00...50.00
> 1000S.: -

2nd speed 1/min: 400
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 27.00...37.00
> 1000S.: -

3rd speed 1/min: 100
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 47.00...47.00

4th speed 1/min: 100
KSB/AFB
valve > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm³/: 36.00...52.00
> 1000S.: -

Shutoff electromagnet:

Cut-in
>min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
K mm: 3.2...3.4
KF mm: 5.2...5.6
MS mm: 0.7...1.1
Ya mm: 24.2...26.2
Yb mm: 53.7...64.3

Remarks:

Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end

Z = Absolute delivery

Pump in stepped LDA

Permissible port/port scatter with
stop test, electrical = max. 5.0
ccm/1000 S.